OCTOBER 15, 1949

MODERN MEDICINE

The Journal of Diagnosis and Treatment

SYMPOSIUM ON GASTROINTESTINAL DISEASES

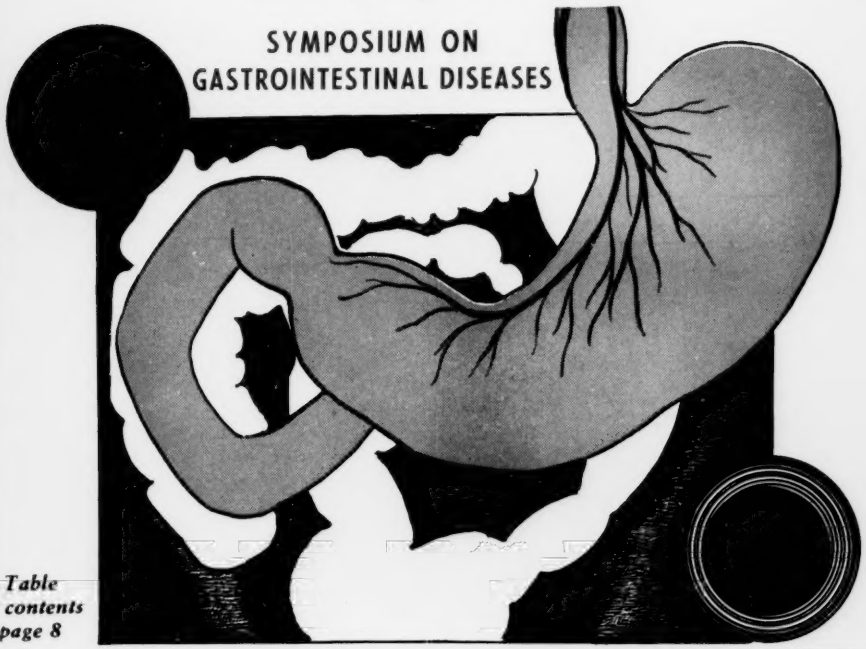

Table of contents page 8

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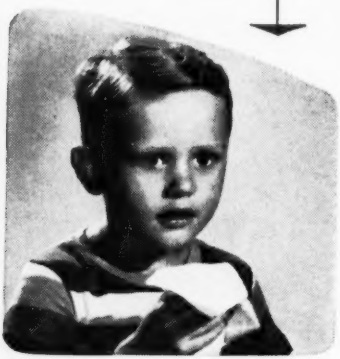

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*Dripps, R. D.: Selective Utilization of Barbiturates—As Illustrated by a Study of Butabarbital Sodium (N.N.R.), J.A.M.A. *139*:148 (Jan. 15) 1940.

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(1) Teeter, E. J.: *J.A.M.A.*, 127:973, Apr. 14, 1945. (2) Reznikoff, P., and Goebel, W. F.: *Jour. Clin. Investigation*, 16:547, July, 1937. (3) Tompsett, S. L.: *Biochem. Jour.*, 34:959 June, 1940.

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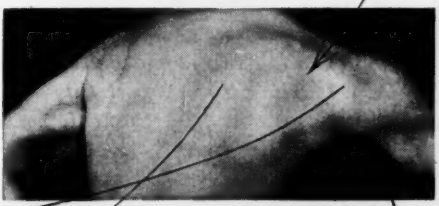

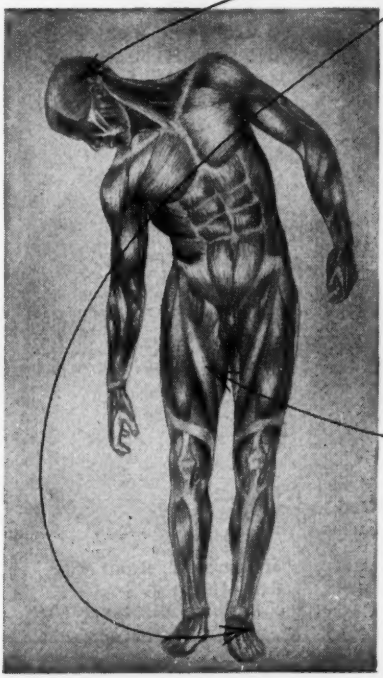

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MODERN MEDICINE

THE JOURNAL OF DIAGNOSIS AND TREATMENT

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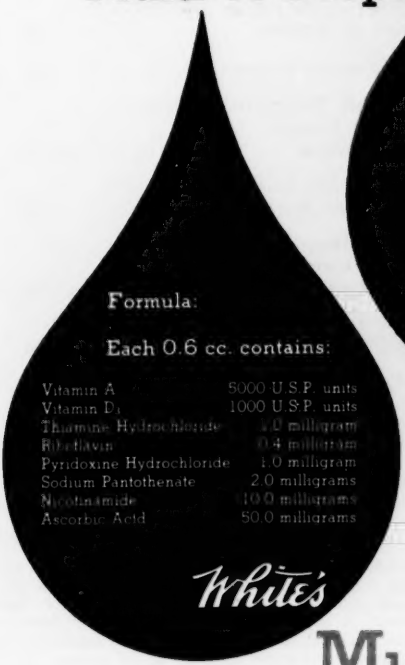

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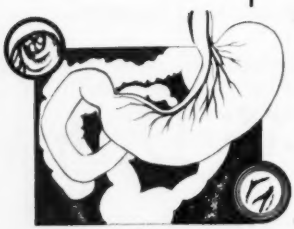
Contents for October 15 1949

VOL. 17, NO. 20



THE COVER for this issue devoted to diseases of the gastrointestinal tract was conceived by our Consultant in Gastroenterology and was executed by our Art Editor, Miss Daisy Stilwell. A roentgenogram of a section of intestine provides the background for a superimposed stomach with the vagus nerve distribution outlined on its surface. These elements together with gastroscopic and sigmoidoscopic views have been worked into a compact composition symbolic of the Symposium which starts on page 53.

Contents for October 15 1949

CONTINUED

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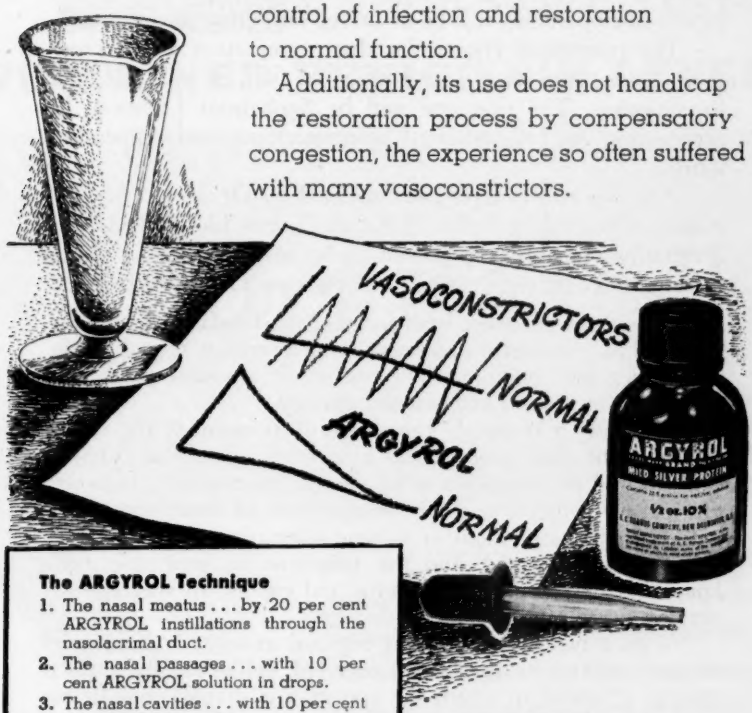

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LETTER FROM THE EDITOR

Dear Reader:

In the next issue of MODERN MEDICINE the first of a series of common surgical operations will be published. Each presentation will begin with an anatomic drawing showing the relative positions of the surgical landmarks involved and then proceed, step by step, through the entire operation. Each month one operation will be described and illustrated in detail.

The operations chosen for this presentation as "Technigrams" are those which are within the field of most General Practitioners. The first one will be Saphenous Ligation. In preparation are two others, Cholecystectomy and Appendectomy.

The procedures have been selected by Dr. F. M. Al Akl, Associate Attending Surgeon, Kings County Hospital. All the illustrations have been prepared under his direction to convey the essential data with clarity and precision. Dr. Al Akl writes:

> Apart from the basic knowledge of the fundamentals of surgical technic, successful execution of an operative procedure depends upon two conditions. The first is one of proper *geography*, the second, of positive and planned *strategy*.
>
> Obviously a thorough knowledge of anatomy of the region is one of the chief prerequisites of good surgery. For example, you can find the telephone in your house more readily than you can in your neighbor's, simply because you are better acquainted with the relative positions of various objects in your own home. You eventually would find the telephone in your neighbor's house, but only after waste of time and energy. In surgery such needless waste can cause much damage.
>
> With a lucid picture of the regional anatomy in mind, the surgeon can embark upon a preconceived, deliberate, and explicit strategy of action in which the operation is divided into simple consecutive steps.

We believe that this series of Technigrams will be interesting and useful to you. Look at the one in the November 1 issue with a critical eye. Then send us your suggestions and comments. These will be helpful in making succeeding presentations even more useful to you.

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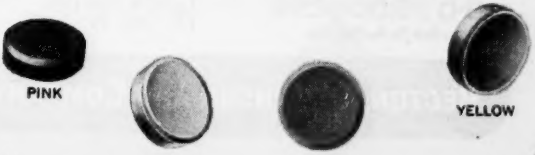

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Feosol Tablets

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Correspondence

Communications from the readers of MODERN MEDICINE *are always welcome. Address communications to The Editors of* MODERN MEDICINE, *84 South 10th St., Minneapolis 3, Minn.*

Real Practical Value

TO THE EDITORS: I greatly appreciate the real practical value of your magazine.

FLOYD E. BATES, M.D.
Ringling, Okla.

Dosage for Myxedema

TO THE EDITORS: The most recent copy of *Modern Medicine* (Aug. 15, 1949) arrived this morning and as usual commanded my earliest attention.

On reading over the Diagnostix, I noted that your Visiting M.D. suggested the use of "2 gr. of desiccated thyroid extract daily." In view of the diagnosis of myxedema this would appear to be contrary to therapy accepted by most endocrinologists. These gentlemen feel that high early dosage may produce sudden and dangerous crisis.

Dr. Paul Starr, Professor of Medicine at the University of Southern California, recommends doses ranging in the neighborhood of 1/8 and 1/4 gr. of thyroid early, later building the dosage to required levels. Having seen the results of such handling of patients with myxedema, I would feel that this is a far more advisable regime.

This is not in any manner meant to be a criticism of your journal. I join with many of your readers in praise for the clear, concise, and informative periodical *Modern Medicine* has become.

LEOPOLD S. TUCHMAN, M.D.
Los Angeles

¶For beginning therapy of frank myxedema, 1 gr. of thyroid extract daily would be advisable, instead of 2. When basal metabolic rate and other evidence indicate complete thyroid deficiency, initial dose of 1/2 gr. or less of thyroid extract daily is recommended, until tolerance is established. Gradually increased amounts up to 3 gr. daily may be required to restore thyroid balance, after which 1 gr. daily is usually sufficient for maintenance.—Ed.

Procaine Technic

TO THE EDITORS: There are a number of things that I would like to have cleared up pertaining to the technic of procaine administration *(Modern Medicine,* July 1, 1949, p. 51).

1] Is there a special type of procaine used? I notice that all the labels on the vials warn against intravenous use. Is the chlorobutanol that is used as a preservative harmful?

2] Is normal saline or some other diluent used with the procaine? How should the procaine be prepared for intravenous use?

3] Do you use an infusion apparatus or a large syringe?

4] Some people cannot tolerate

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procaine. What measures should be taken in the event that a person of this nature reacts to procaine?

Would you answer the above questions?

WALTER HENRY, M.D.

Lynn, Mass.

¶Author of the article referred to was Dr. David J. Graubard. His answers to Dr. Henry's questions follow.—Ed.

► TO THE EDITORS: Allow me to thank you for the opportunity of answering the questions raised by Dr. Henry in his letter to you.

In reference to the technic of procaine administration:

1] As of recent date, the procaine hydrochloride used by Dr. Peterson and myself is obtainable in a 0.1% dilution in isotonic saline: either novocain 0.1% (brand of procaine hydrochloride, manufactured by Winthrop-Stearns, Inc.) or as procaine hydrochloride, U.S.P., in isotonic saline (manufactured by Abbott Laboratories).

Prior to the present date, we have employed the 5-cc. ampule of 20% procaine (Winthrop-Stearns or Abbott) and added that to 1,000 cc. of normal saline solution. In individuals for whom sodium chloride is contraindicated, the gram of procaine was added to 1,000 cc. of 5% glucose in water, U.S.P. The crystalline form of procaine is mentioned merely to be condemned, since one is never certain as to its thorough solution.

It is generally agreed today that the ill effects of procaine injected locally, especially for oral work, are produced mainly by the vasopressor action of the adrenalin which is added to the procaine. Chlorobutanol is a preservative used mainly in the 1% and 2% types of solution, and in itself is not

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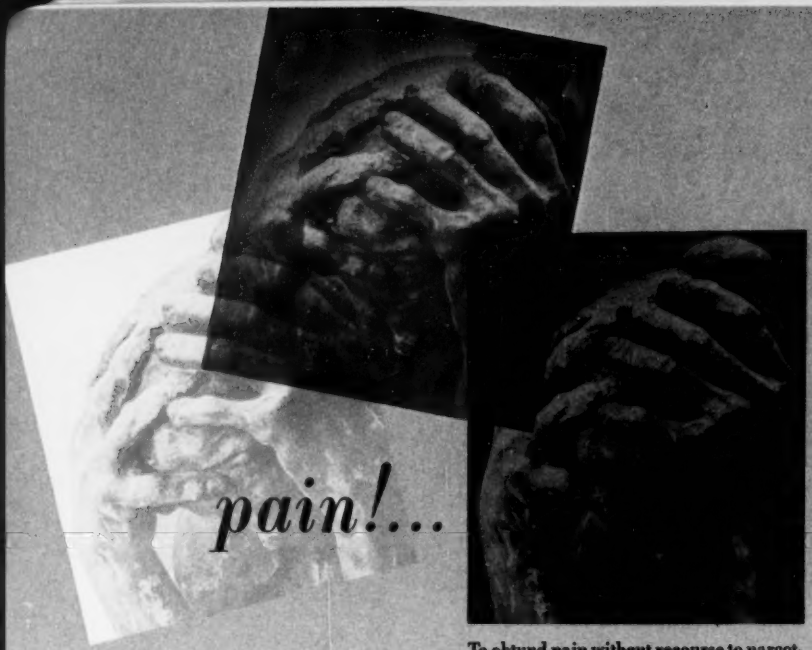

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Hyoscyamine Sulfate	**0.03 mg.**
Phenobarbital (¼ gr.)	**16.2 mg.**

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Richmond 20, Va.

deleterious in the amounts that are used normally. However, we do not believe that the procaine which contains that type of preservative should be used.

2] Either normal saline U.S.P. or the 5% glucose in water U.S.P. may be used as a diluent. Using the prepared solution as mentioned above, it is not necessary to add 1 gm. of procaine to 1 liter of saline.

3] An ordinary infusion apparatus may be used. However, we have devised a "flowrator" for measuring the rate of intravenous fluid. The large syringe technic as employed by the French investigators is not considered, by many men here, to be an adequate one.

4] In over 5,000 infusions given to individuals from about two years to those of ninety-four years of age, we have found no evidence of intolerance to procaine, although some localized dermatologic lesions are noticed, especially by dentists. We have encountered no sensitivity to procaine, however, even in those cases allegedly sensitive.

For individuals who may show some symptoms of toxicity, we recommend small doses of evipal (Winthrop-Stearns, Inc.) or pentothal sodium (Abbott) intravenously.

In the event that barbiturates are given intravenously, one should exercise caution to avoid barbiturate poisoning.

DAVID J. GRAUBARD, M.D.
New York City

Finest Yet!

TO THE EDITORS: Congratulations upon your July 1 issue of *Modern Medicine*. It is the finest yet.

J. H. CONN, M.D.
Baltimore

Help for Phlebitis

TO THE EDITORS: In your Question and Answer department *(Modern Medicine,* Aug. 1, 1949, p. 24) "M.D., Pennsylvania" inquires about migratory phlebitis. I would like to pass this thought on to him:

Has every possible effort to exclude malignancy been made in this case? In view of the failure of treatment, this certainly must be considered. I have seen 2 similar patients who had been to numerous physicians without results and malignancy had been overlooked. If this should prove true in this case, I would appreciate hearing from the Pennsylvania M.D.

CHARLES H. WHITE, M.D.
Sumter, S. C.

► TO THE EDITORS: Concerning the treatment for migratory phlebitis requested by "M.D., Pennsylvania," Dr. Frank Selecman of this city reports several such cases successfully treated with an antihistaminic agent. I believe he used Histadyl. He has reprints on this and am sure he would be glad to furnish some. In applying such treatment it was suggested by a consultant that this particular vascular disease is an allergy.

J. L. PIERCE, JR., M.D.
Dallas

¶Dr. Frank Selecman, Medical Arts Bldg., Dallas, very kindly offers to supply any interested physician with a reprint of his and Dr. Edward W. Miller's article on "Antihistamine Therapy in Thrombophlebitis Migrans," *Surgery* 25:605-607, 1949.

Lots of Information

TO THE EDITORS: I read and enjoy and obtain lots of information and knowledge from *Modern Medicine.*

W. C. ROBERTS, M.D.
Panama City, Fla.

The common cold aborted with . . .

Pyribenzamine

—report 3 independent investigators

The theory that an allergic reaction is the trigger mechanism in the common cold is gaining wide acceptance. Three reports have been published by independent investigators on their use of Pyribenzamine to abort the common cold. All stress that treatment begun within a few hours after onset of symptoms produces the greatest benefits.

★

Results of Treatment of Common Cold with Pyribenzamine

Persons treated	Number	Benefit	%
Students[1]	252	224	89
Factory Workers[2]	494	397	80
Naval Personnel[3]	466*	348	75

*Includes patients treated with other antihistaminics.

1. Gordon, John S.: Laryngoscope, 58: 1265 (Dec.) 1948.
2. Murray, H. C.: Indust. Med. 18: 215 (May) 1949.
3. Brewster, John M.: U. S. Nav. M. Bull. 49:1 (Jan.-Feb.) 1949.

Pyribenzamine Expectorant—Each teaspoonful contains 30 mg. Pyribenzamine citrate, 10 mg. of ephedrine sulfate and 80 mg. of ammonium chloride.

Dosage—Adults: 1 or 2 teaspoonfuls every 3 to 4 hours followed by a small glass of water.
Children: ½ to 1 teaspoonful every 3 to 4 hours.

Pyribenzamine Nebulizer—Distributes mist of minute droplets of Pyribenzamine hydrochloride Nasal Solution 0.5% throughout nasal passages. Provides effective relief of allergic nasal symptoms with no side reactions.

Dosage—1 application to each nostril every 3 to 4 hours.

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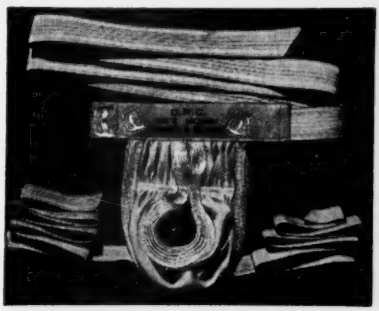

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FIRST IN ELASTIC SUPPORTS

Questions & Answers

All questions received will be answered by letter directed to the petitioner; questions chosen for publication will appear with the physician's name deleted. Address all inquiries to the Editorial Department, MODERN MEDICINE, *84 South Tenth Street, Minneapolis 3, Minnesota.*

QUESTION: What is the treatment for scleroderma?

M.D., Kentucky

ANSWER: *By Consultant in Dermatology.* There is no recognized effective treatment for this disorder. Most recently the dependence has been upon oral use of bismuth. I am not too encouraged by the results, though there have been some enthusiastic supporters of this treatment. Vitamin E has also been used recently, but my experience with it has been too slight to allow judgment. Neither form of treatment is encouraged; they are mentioned because they are the latest developments and nothing else has been of value. X-ray therapy is contraindicated in most instances of scleroderma. If it has any value, it is probably only in the early inflammatory phase, and even that is doubtful.

QUESTION: Has the use of silver nitrate for the newborn's eyes been superseded by some other method of prophylaxis?

M.D., Texas

ANSWER: *By Consultant in Obstetrics.* In 1948 a special committee of the American Academy of Ophthalmology and Otolaryngology stated that, although some form of antibiotic prophylaxis may eventually replace silver nitrate, much more investigation is needed before specific recommendations are made. The Council of the American Academy of Ophthalmology and Otolaryngology and the Section on Ophthalmology of the American Medical Association last year approved a report of a joint committee which came to the same conclusion. Until the situation is clarified in regard to antibiotic prophylaxis the Credé method is recommended.

QUESTION: A thirty-seven-year-old unmarried female patient has for the past several years complained of periodic attacks of burning in both thighs, occurring once or twice per week. Physical examinations, elaborate laboratory investigation, and surgical and medical consultation at a large clinic yielded no results during a period of five years. Maintenance on high-vitamin intake has been of no avail, but large doses of aspirin relieve the patient.

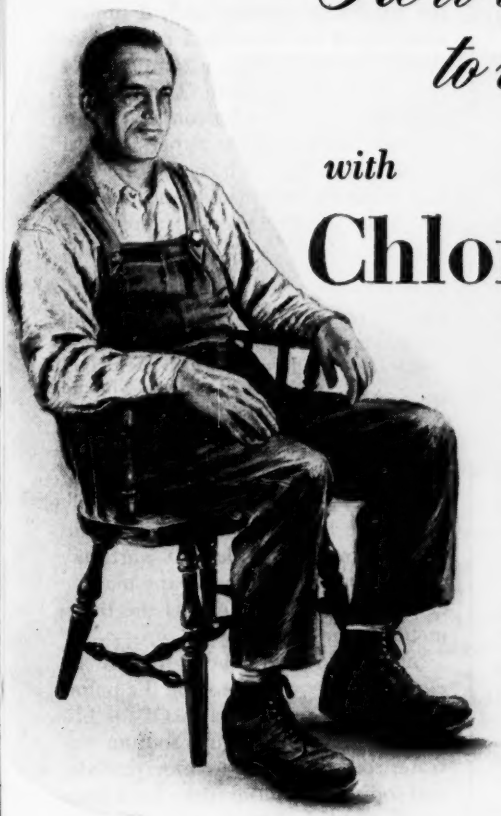
M.D., Illinois

ANSWER: *By Consultant in Psychiatry.* Recommendation of specific therapy is uncertain and difficult on the basis of a single presenting complaint. This much, however, may be said: The symptom is of psychogenic origin and is not uncommon in hysterical patients in whom burning, tingling, or formication in the thighs represents a conversion phenomenon of unrecognized and repressed sexual feelings.

He'll be back to work sooner...

with

Chloromycetin®



The cost of medication, of course, is but one item in the total cost of illness, the greatest expense stemming from the length of incapacitation and consequent loss of working time. One distinct advantage of **CHLOROMYCETIN** therapy is its fundamental economy—quick clinical response, reduced morbidity, shortened convalescence and earlier return of the patient to his job.

Particularly dramatic results are now obtained in a disease such as typhoid fever, where the illness formerly ran its course for several weeks because of the lack of specific therapy. The lengthy hospitalization, special nursing care, the supportive measures during this prolonged period—all have contributed to increased costs. However, **CHLOROMYCETIN** changes this: the duration of illness is greatly reduced, defervescence occurring within 2 to 3 days after treatment is begun. With control of the infection, general improvement is manifest and recovery is rapid.

The high degree of efficacy of **CHLOROMYCETIN** has also been demonstrated in a number of other diseases previously unresponsive or poorly responsive to treatment, such as acute undulant fever, urinary tract infection, typhus fever, Rocky Mountain spotted fever, scrub typhus, and granuloma inguinale.

PACKAGING

CHLOROMYCETIN (Chloramphenicol, Parke-Davis) is supplied in 0.25 Gm. Kapseals. Descriptive literature on **CHLOROMYCETIN** is available to physicians on request.

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A psychiatric exploration of the patient's emotional life should clarify the particular etiology and, if understanding of the condition can be imparted to the patient, a symptomatic cure may be expected. The technic of eliciting the information, while not difficult, does require experience in discussing matters which may be embarrassing to the patient, and may require the collaboration of a psychiatrist.

QUESTION: What are the bismuth preparations and dosages for injection into a ¼-in. common wart on the palm?
M.D., Pennsylvania

ANSWER: *By Consultant in Dermatology.* Small amounts, several cubic millimeters, of aqueous solutions of bismuth injected in or immediately under the base of a wart produce inflammation, after which the wart may disappear. While this therapy may be effective, it is by no means the treatment of choice.

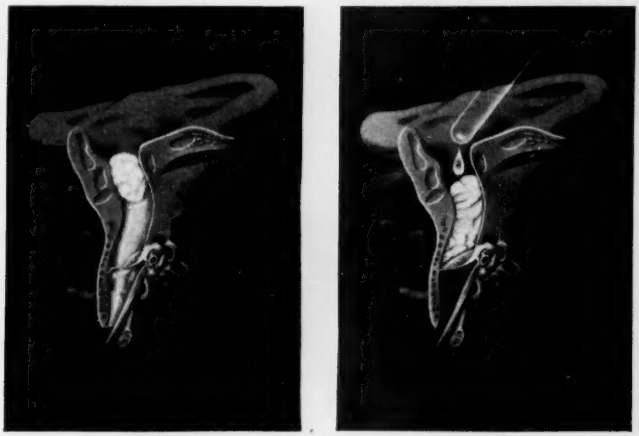
Small warts are best treated by electrosurgery, and those on the palms and soles by radiotherapy. Of the bismuth salts used, bismuth sodium tartrate, sodium bismuth thioglycollate, and sodium iodobismuthite have been recommended. Equal amounts of a 1 or 2% solution of novocain will relieve discomfort during and after the injection.

QUESTION: Is there any treatment of value in prurigo nodularis?
M.D., Minnesota

ANSWER: *By Consultant in Dermatology.* Diagnostic criteria for prurigo nodularis are not too well established and one physician may not understand exactly what another physician means by the term. In general, the disease is thought to be in the family

Five-fold attack against

Middle Ear Disease **External Ear Disease**



1. **Antibacterial**—local infection effectively attacked by high concentration of sulfa-urea.[1,2]
2. **Debriding**—infection site rapidly cleansed—odors reduced, and waste material removed.
3. **Analgesic**—pain and itching relieved by chlorobutanol.
4. **Fungicidal**—inhibits common fungous contaminants.
5. **Hygroscopic**—absorbs excess moisture, acts as decongestant.

White's Otomide is a stable solution of 5% Sulfanilamide, 10% Carbamide (Urea) and 3% Anhydrous Chlorobutanol in glycerin of high hygroscopic activity. Supplied in dropper bottles of ½ fluid ounce (15 cc.)

White's **OTOMIDE**

Topical Otologic Chemotherapy

WHITE LABORATORIES, INC., Pharmaceutical Manufacturers, Newark 7, N. J.

1. Holder, H. G., and MacKay, E. M.: Mil. Surg. *90*:509-518 (May) 1942.
2. Holder, H. G., and MacKay, E. M.: Surgery *13*:677-682 (May) 1943.

of atopic disorders and is regarded by some as localized lichenified neurodermatitis.

If the number of lesions is not too great, it may be practical to treat them individually by close shielding and exposure to subintensive doses of roentgen radiation, or by application of solid carbon dioxide for twenty to forty seconds producing a considerable reaction.

Ointments are of little avail in this condition unless dressings are kept on constantly.

QUESTION: I would like a full explanation of the method of estimating metabolic rate as reported in *Modern Medicine,* June 1, p. 56. How is the rate computed?

M.D., North Carolina

ANSWER: *By Consultant in Internal Medicine.* The method reported was that of Eugene Bene of Prague. Dr. Bene, writing in *Lancet,* says:

"The method [Bene] gives the basal metabolic rate as an index—e.g., normal pulse-rate (72) x normal respiration-rate (18) equals 1296. The normal range is 1100-1500; below 1100 the index indicates decreased, above 1500 increased basal metabolic rate."

The chief advantage of the RP index lies in its simplicity and its reasonable degree of correspondence to the Krogh method.

Dr. Bene investigated 100 patients by the Krogh method and at the same time obtained the clinical data required to apply the RP-index formula, with the following results:

	Correspondence with Krogh (%)	
Krogh	*Patients*	*RP index*
Above +15%	43	67
Between +15% and -10%	48	79
Below -10%	9	79

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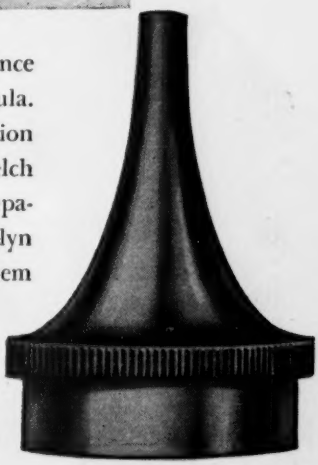

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Nylon specula will not crack or shatter even under repeated hammer blows . . . may be considered non-breakable under any conditions of normal use.

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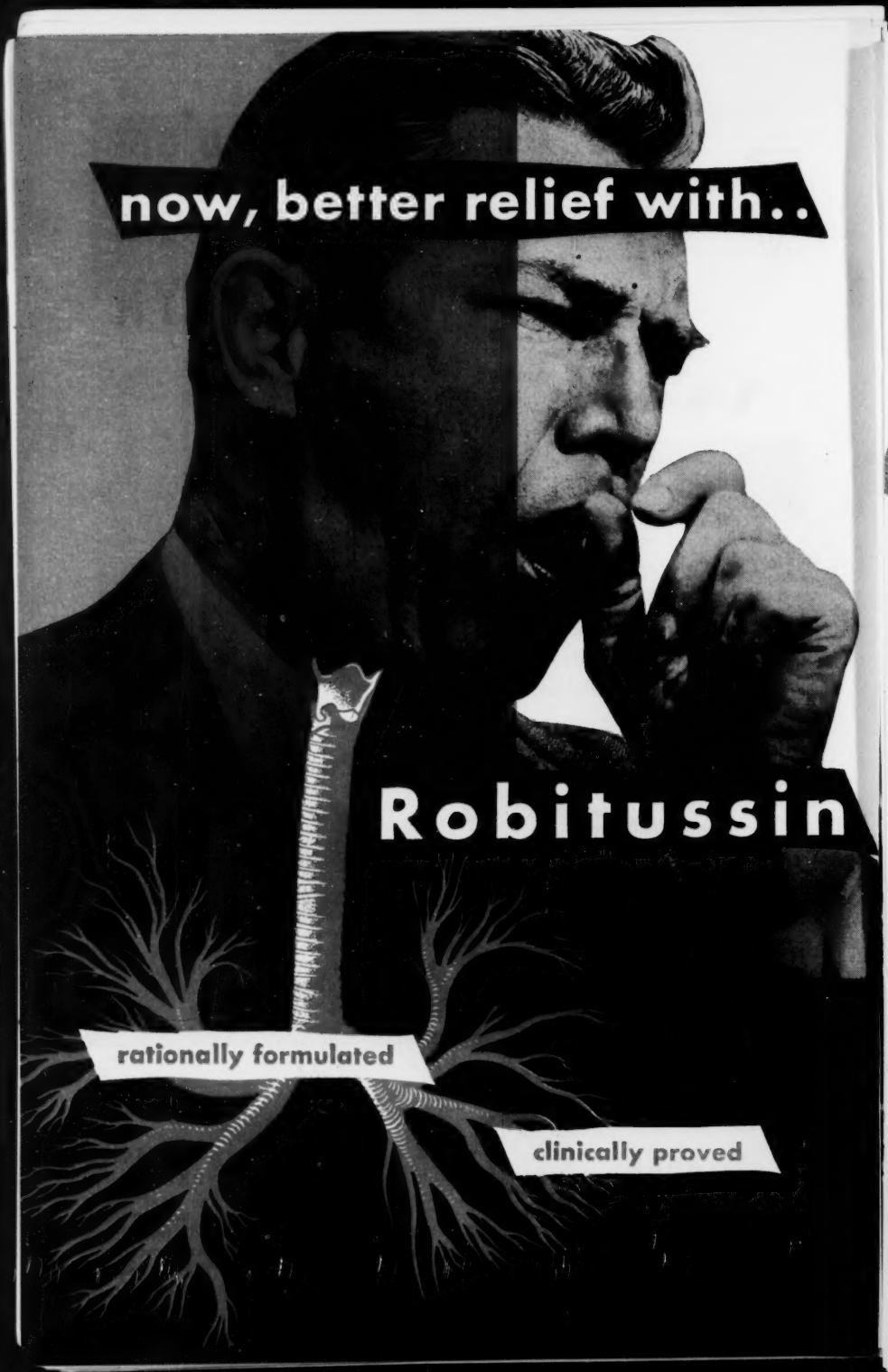
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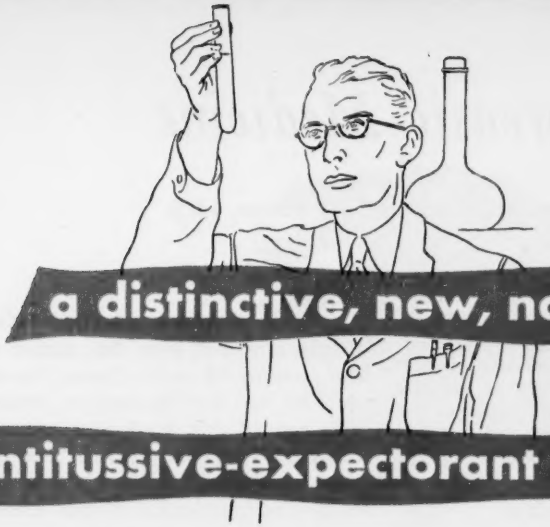
Robitussin
rationally formulated
clinically proved



a distinctive, new, non-narcotic antitussive-expectorant

At last, something really new in cough syrups . . . something completely rational . . . clinically sound . . . Robitussin 'Robins'.

Robitussin employs glyceryl guaiacolate and desoxyephedrine hydrochloride, in a palatable aromatic syrup vehicle.

Glyceryl guaiacolate has proven an effective aid to expectoration, and a cough ameliorator with prolonged action, through its increase in and thinning of respiratory tract fluid;[1,2,3] yet it has no ill effect upon digestion.[1]

Desoxyephedrine's sympathomimetic action is also well recognized;[4,5,6] by relaxing spasm of the bronchial musculature and helping maintain normal respiratory smooth muscle tone, it greatly minimizes the provocation of cough from spasm.[5] At the same time it affords relief from psychic depression or a feeling of fatigue.

The syrupy vehicle, with its aromatic volatile oils, has a local demulcent effect. Furthermore, it assures patient cooperation by providing a base which makes Robitussin one of the most palatable of all antitussive-expectorants.

You will find Robitussin 'Robins' an exceptionally efficient, safe, therapeutic tool in the management of cough — for both adults and children.

DOSAGE: Children: one-half to one teaspoonful, according to age, three or more times daily. Adults: one or two teaspoonfuls, as necessary every two to three hours.

SUPPLIED: Pint and gallon bottles.

REFERENCES: 1. Connell, W. F. et al: Canadian Med. Assoc. J., 42:220, 1940. 2. Perry W. F. and Boyd, E. M.: J. Pharm. Exper. Ther., 73:65, 1941. 3. Stevens, M. E. et al: Canadian Med. Assoc. J., 48:124, 1943. 4. Foltz, E. E. et al: J. Lab. Clin. Med., 28:603, 1943. 5. Graham, B. E.: Ind. Eng. Chem., Ind. Ed., 37:149, 1945. 6. Schulz, F. and Deckner, S.: Klin. Wochschr., 21:674, 1942.

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Ethical Pharmaceuticals of Merit since 1878

Formula

Each 5 cc. (1 teaspoonful) of Robitussin contains:
Glyceryl Guaiacolate, 100 mg.
Desoxyephedrine Hydrochloride, 1 mg.
In a palatable aromatic syrup.

Robitussin

for rational cough management

Forensic Medicine

COMPILED BY ARTHUR L. H. STREET, LL.B.

PROBLEM: A patient being treated for drug addiction was injured by the insufficiently sterilized hypodermic needles used in the hospital. Could he establish a prima facie case of negligence of the hospital for failing to furnish the nurses with a closed sterilizing apparatus using steam under pressure?

COURT'S ANSWER: Yes.

The New York Supreme Court, Appellate Division, said that expert testimony showed that the method used—attempted sterilization in open boiling water—was inadequate because not all germs and spores were killed by it. Furthermore, the instruments were not left in the boiling water for at least twenty minutes. The court stressed the fact that "the plaintiff came to the hospital to obtain treatment advertised by it to cure drug addicts" (89 N.Y. Supp. 2d 190).

PROBLEM: If a physician knew, or ought to have known, that a patient had smallpox, failed to notify the health authorities, and assured a neighbor that the patient had no contagious disease, could the doctor be held liable for the neighbor's death caused by exposure to the disease in making a friendly visit to the patient?

COURT'S ANSWER: Yes.

The Ohio Supreme Court said that the law required a general practitioner to know whether he was dealing with a dangerously contagious disease. "If it were a defense for such practicing physician, who had failed to discover and give due notice of the presence of such a disease, to say that he had not theretofore treated a disease of that kind, and had not observed symptoms such as the patient involved manifested, the escape from the provisions of the statute would surely be marvelously easy" (118 Ohio St. Rep. 147, 160 N. E. 456).

In a later case (1942) the Ohio Court of Appeals, Williams County, followed the same reasoning, by deciding that when an obstetrician failed to report to the health authorities that an infant had inflammation of the eyes, as required by statute, that fact was pertinent in a suit for damages brought against the doctor for negligently causing loss of the infant's eye. The court said that whether the child would have been beneficially treated had the required notice been given to the health authorities was not necessarily so far conjectural as to relieve the doctor from liability (70 Ohio App. 527, 47 N. E. 2d 404).

The court referred to a similar case decided by the Massachusetts Supreme Judicial Court. There it was decided that a doctor contributed to the loss of an infant's eyesight by delaying more than a day in reporting the condition of the child's eyes to the health authorities, as was required by statute (230 Mass. 201, 119 N. E. 773).

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safe detoxifying colloidal sulfur

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Sulphocol Capsules (5 gr.) 1 or 2 after meals. Bottles of 100. Sulphocol Sol (parenteral), 25 cc. vials; 12 and 100-2 cc. vials. 1/4 to 1/2 cc. intramuscularly at 3 to 7 day intervals, gradually increased to 3 cc. Write for literature and samples of Sulphocol Capsules.

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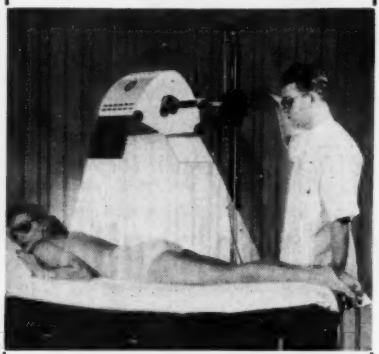
Manufacturers of Pharmaceutical, Biological and Biochemical Products for the Medical Profession



PROBLEM: Ordinarily a doctor may not be adjudged liable for alleged malpractice in diagnosis or treatment unless a medical expert testifies that the doctor was negligent. Must the expert belong to the same school of practice?

COURT'S ANSWER: Yes.

The Texas Supreme Court assumed that the particular school of practice is "of good standing with established rules and principles of practice" and concurred that the doctor is entitled to have his conduct measured by the standards of his own school "because a person professing to follow one system or school of medicine cannot be expected by his patient to practice any other, and if he performs the treatment with ordinary skill and care in accordance with his school of practice, he is not answerable for bad results" (219 S. W. 2d 779).

PROBLEM: An unconscious woman was removed by police to a hospital where the doctor on duty diagnosed the case as one of acute alcoholism. He made extensive physical and neurologic examination but no blood or urine test. There was no odor of alcohol on her breath and she was a teetotaler. She was taken to another hospital, where a brain blood clot was detected and removed. In a malpractice suit against the doctor and hospital, was a verdict in favor of the woman vitiated by refusal of the trial judge to instruct the jury that before she could win the suit they must find that the injuries of which plaintiff complained were caused by defendants' negligence?

COURT'S ANSWER: Yes.

The U.S. Court of Appeals, District of Columbia, by a 2 to 1 decision, decided that refusal to give the instruction was prejudicial because the jury should have been told that no damages could be collected for so much of the plaintiff's injury as was caused by the blood clot, for which

RAPID HEMOGLOBIN REGENERATION
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1.2% average daily hemoglobin regeneration, over a 30-day period, is attainable with IROCINE (2 tablets t.i.d.), without unpleasant side reactions. Catalytic amplification of Iron Sodium Malate, a new, readily tolerated organic salt of iron, makes this possible.

Write for sample and literature about this important advance in the treatment of iron deficiency anemias.

Formula: **Each Irocine tablet contains:**

Iron Sodium Malate, R&C	200 mg. (3 gr.)
Copper Sulfate, U.S.P.	4 mg. (1/15 gr.)
Liver, desiccated & defatted	200 mg. (3 gr.)
Thiamine Hydrochloride, U.S.P.	0.17 mg.
Vitamin D	67 U.S.P. units

Dosage: **2 tablets t.i.d., preferably at mealtimes.**

Packaging: **100, 500 and 1000 tablets.**

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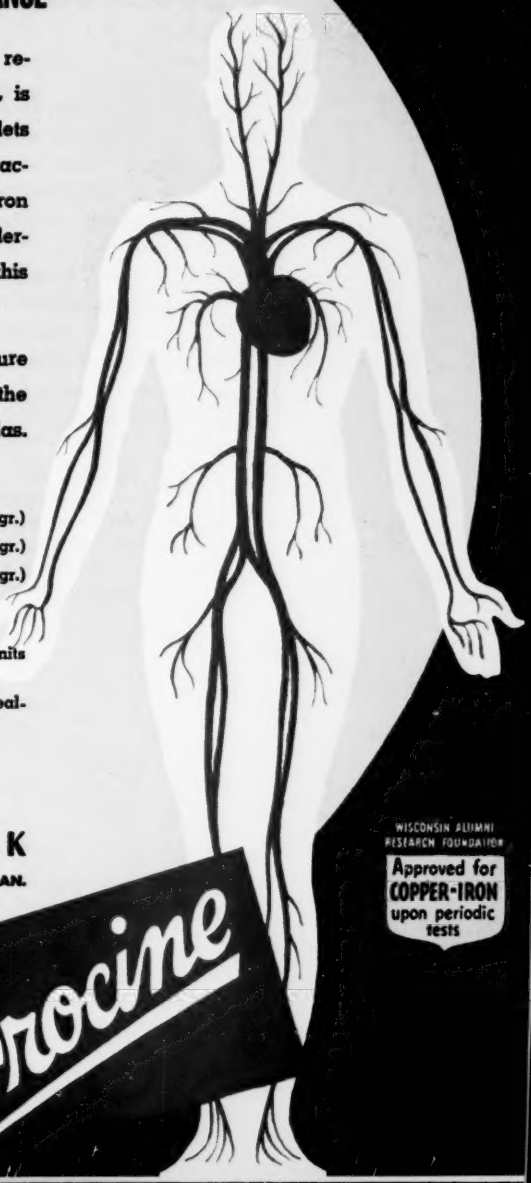

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Synthesis of Dihydroxy Aluminum Aminoacetate, an important new aluminum salt of the amino acid glycine, for prompt and sustained acid buffering action and minimal constipating effect in the peptic ulcers—gastric, duodenal, jejunal.

Development of improved, longer acting formulations—ALRAC and ALRACOMP, in which fast acting Dihydroxy Aluminum Aminoacetate is "geared" with its logical therapeutic complement Magnesium Trisilicate to further prolong the antacid action. Other important features: no acid rebound; no digestive disturbances; non-alkalizing. ALRACOMP contains also a sedative and an antispasmodic.

ALRACOMP dosage: **When sedative and antispasmodic actions are required, 1 Alrac tablet and 1 Alracomp tablet should be taken between meals and 2 Alracomp tablets on retiring. Additional Alrac tablets or fewer Alracomp tablets may be taken if desired.**

Packaging: **100, 500 and 1000.**

REED & CARNRICK

defendants were not responsible, although damages could be collected for aggravation of that injury by defendants' negligence, if any.

The court noted that there was expert testimony that under approved practice by physicians in the District of Columbia either a blood or urine analysis was prerequisite to a diagnosis of acute alcoholism (174 Fed. 2d 507).

PROBLEM: A Florida physician was convicted of perjury and grand larceny. Conviction for a felony was ground for revoking a physician's license but, before the license was revoked, the governor pardoned him. Did the pardon preclude revocation of the license?

COURT'S ANSWER: No.

The Florida Supreme Court said:

It cannot be contended here that the Legislature . . . had not the power to require, as a condition to the right to practice medicine, that the practitioner shall not only be learned in the profession but have in addition thereto the qualifications of honor and good moral character. . . . The adjudication of his guilt of a felony . . . rendered the medical practitioner a man of such character as to render it unsafe to trust the lives and the health of the citizens . . . to his professional care.

The court approvingly quoted a statement to the effect that a pardon involves forgiveness but "does not wash out the moral stain" of the conviction.

A dissenting justice argued that the pardon precluded a reliance upon the conviction of the felony as ground for revocation; admitting that had the proceedings to revoke the license been based upon the unlawful acts that would have constituted ground for revocation, independently of criminal prosecution, the proceedings might then have been sustainable (192 So. 205).

External Cod Liver Oil Therapy

DESITIN OINTMENT

Contains Crude Cod Liver Oil, Zinc Oxide, Talcum, Petrolatum and Lanolin

Used effectively in GENERAL PRACTICE for the treatment of Wounds, Burns, Indolent Ulcers, Decubitus, Intertrigo, Skin Lesions, Hemorrhoids, Anal Fissures, etc.

In PEDIATRICS for the treatment of Diaper Rash, Exanthema, Chafed and Irritated Skin caused by Urine, Excrements or Friction, Prickly Heat and in the nursery for General Infant Care.

Fatty acids and vitamins are in proper ratio, thereby producing optimum results. Non irritant, acts as an antiphlogistic, allays pain, stimulates granulation, favors epithelization. Under Desitin dressing, necrotic tissue is quickly cast off. Dressing does not adhere to the wound. In tubes 1 oz., 2 oz., 4 oz., and 1 lb. jars.

Desitin Medicinal Dusting Powder is super fatted with crude cod liver oil in a non irritating powder base. Indications: In infant care in the treatment of IRRITATED SKIN, SUPERFICIAL WOUNDS, DECUBITUS, INTERTRIGO, PRURTUS and URTICARIA, in 2 oz. Shaker-Top Cans.

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For the Medical Profession

DESITIN CHEMICAL COMPANY

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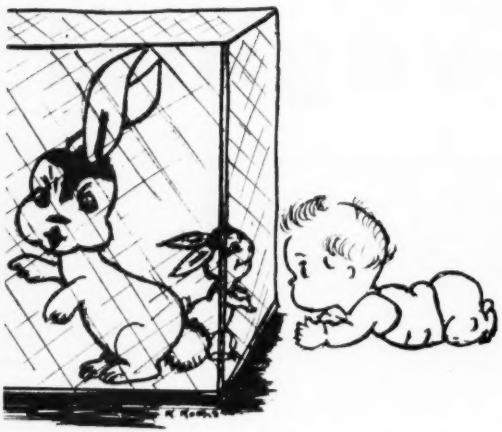
Washington Letter

Military Services Economize on Doctors

A year ago, military services were working on plans for a doctor draft. Now, there's not the slightest possibility of one.

Several developments are responsible, and not the least of these is the forceful operation of the new Office of Medical Service in the Department of Defense. The Medical Service recommendations, prepared under the direction of Dr. Raymond B. Allen, were presented to Defense Secretary Louis Johnson a short time ago. They pointed out specific examples of how military personnel was being wasted and suggested ways to eliminate this waste.

Dr. Allen's report had been preceded by two other developments bearing on the problem.



"Come away, Junior. For him your sister died."

Shortly after the first of the year, it had become apparent that Army, Navy, and Air Force would be required to restrict, not expand their operations. This was confirmed when House and Senate committees went to work on military appropriations bills. From then on the question was not how to improve medical services, but how to reduce the cost.

Meanwhile, the various campaigns to induce physicians to give some time to military duty were paying off. No one campaign was a big success, but each brought in a few hundred physicians who otherwise would not have signed up. The "moral suasion" drive, aimed at getting into uniform several hundred government-educated men, did not approach its goal, but it helped. Also the program to induce physicians of all ages to give a few days a month to military service met with some success.

When Dr. Allen's recommendations for efficiency were added to this situation, the result was complete cessation of any talk of a physician draft.

Civilian Defense Organization

The Medical Service Office, now under the direction of Dr. Richard L. Meiling, can also be given credit for reviving the medical phase of the national

civil defense program. A great deal of writing and talking had been done about the nation's health services in any future war, but actual preparation was nil. Now, through the Defense Department's Division of Civil Health in War Affairs, half a dozen separate efforts are being coordinated. The Medical Service Office has assumed the role of a clearinghouse, cooperating with Army, Navy, Air Force, Public Health, and Veterans Affairs, as well as every important national organization in the field of health services.

Aviation Medicine Course

A nine-month Navy course in aviation medicine, starting Nov. 15, is open to inactive reserves, but carries the requirement that the student agree to remain on active duty for one year after completion of the course. The academic course is nine months, but an additional course of three months in flight indoctrination training is provided.

Training will be offered in the medical aspects of atomic warfare; in the problems of high acceleration, and in the effects of high altitude flight.

* * *

A pamphlet, *Keeping the Balance*, a description of the work of the Navy School of Aviation and Research, may be obtained by writing the Navy's Bureau of Medicine and Surgery, Washington 25, D.C.

* * *

The Navy, observing the 107th anniversary of the establishment of its Bureau of Medicine and Surgery, notes that its first chief was William P. C. Barton, who founded the section in 1842.

"The best inhaler they have ever used!"

the new S.K.F. BENZEDREX INHALER

So much better that we have discontinued 'Benzedrine' Inhaler

Physicians tell us that they and their patients find BENZEDREX INHALER the best inhaler they have ever used.

The active ingredient of BENZEDREX INHALER is 1-cyclohexyl-2-methylaminopropane, a new S.K.F. compound. It has exactly the same agreeable odor as Benzedrine*, gives even more effective and prolonged shrinkage, and does NOT produce excitation or wakefulness.

We are sure you will find that BENZEDREX INHALER is the best volatile vasoconstrictor you have ever used.

Smith, Kline & French Laboratories, Philadelphia

*"Benzedrine" (racemic amphetamine, S.K.F.) and "Benzedrex" T.M. Reg. U.S. Pat. Off.

WHO Venereal Disease Experts Report on U. S.

For the first time, this country is getting a direct dividend from contributions to the U.N.'s World Health Organization. Seven world experts on venereal disease control are just completing a two-month inspection tour of cities in the United States.

The purpose is to provide an international evaluation of our methods of venereal disease control, with particular attention to rapid treatment with penicillin. The delegation has visited Boston, New York, Baltimore, Philadelphia, Chicago, Minneapolis, Hot Springs, Ark., Atlanta, Savannah, Chapel Hill, N.C., and Washington, D.C. Their report will be available through the U.N. in a few weeks' time.

* * *

Dr. G. Robert Coatney, of U.S. Public Health Service, represented the United States at a Geneva meeting of the WHO Expert Committee on Malaria. Participating, in addition to the United States, were Great Britain, France, Venezuela, and India.

No Disease Increase from Radiation Exposure

Atomic Energy Commission reports "no evidence of increased occurrence of any disease, including cancer," among Japanese who were exposed to radiation at Nagasaki and Hiroshima.

This was one of the facts brought out in the A.E.C.'s sixth annual report to Congress. This particular study will be continued over a number of years, and findings will appear in regular commission reports. Included is a genetics program to de-

(Continued on page 50)

at the very first sign of a cold

STOP ***its development—***

antihistaminic therapy has been reported to abort the development of the common cold in 90% of the patients commencing therapy within the first hour of the appearance of symptoms.[1]

DETOUR ***distressing symptoms—***

antihistaminic therapy shortens the duration and decreases the severity of an established cold.[1, 2]

BY-PASS ***spread of infection to others—***

the elimination of sneezing, lacrimation, rhinorrhea and coughing reduces cross-infection.[1]

CORICIDIN*

(Antipyretic-analgesic-antihistaminic)

combines the classical "A.P.C. formula" (Acetylsalicyclic acid 3.5 gr., Acetophenetidin 2.5 gr. and Caffeine 0 5 gr.) with *Chlor-Trimeton** the antihistaminic with minimal side-effects and greater effectiveness in doses as low as 2-4 mg.[3]

The Allergic Concept of the Common Cold: The symptoms of upper respiratory infections closely resemble those found in vasomotor rhinitis and hay fever. More histamine-like substances were found in the nasal secretions of persons suffering from colds than in allergic rhinitis.[4]

Dosage and Timing: Two CORICIDIN Tablets *at the very first indication* of a cold, then one tablet every three or four hours for three or four days. In established colds, one tablet every three or four hours for palliative effect.

Packaging: CORICIDIN Tablets, tubes of 12, bottles of 100 and 1000.

Bibliography: 1. Brewster, J. M.: Indust. Med. *18*:217, 1949. 2. Murray, H. C.: Indust. Med. *18*:215, 1949. 3. Tislow, R. and others: Federation Proc., Part I, *8*:338, 1949. 4. Troescher-Elam, E.; Ancona, G. R., and Kerr, W. J.: Am. J. Physiol. *145*:711, 1945.

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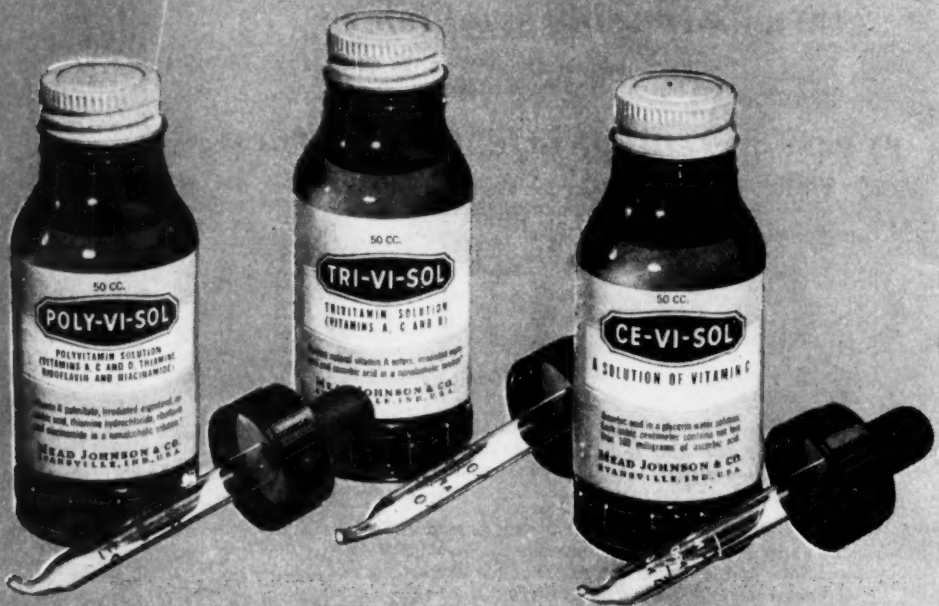

Poly-Vi-Sol

Each 0.6 cc., the usual daily dose, supplies:

Vitamin A	5000 USP units
Vitamin D	1000 USP units
Thiamine	1.0 mg
Riboflavin	0.8 mg
Niacinamide	5.0 mg
Ascorbic Acid	50.0 mg

Tri-Vi-Sol

Each 0.6 cc., the usual daily dose, supplies:

Vitamin A	5000 USP units
Vitamin D	1000 USP units
Ascorbic Acid	50 mg

Ce-Vi-Sol

Each 0.5 cc., the usual daily dose, supplies:

Ascorbic Acid	50 mg

each is

Soluble in Water and other liquids
Scientifically Formulated
Pleasing to the Taste
Convenient to Administer
Ethically Marketed

indications

All of these preparations are ideally suited for the routine supplementation of the diets of infants and children. They can also be administered to adults.

administration

Any of these preparations can be stirred into infant's formula, into fruit juice, milk or other liquid, or mixed into cereal, pudding, or other solid food. They can be given with a spoon or dropped directly into the mouth.

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termine whether the radioactive emanations affect the germ plasma of adults sufficiently to cause discernible genetic effects in their offspring. Doctor-nurse teams are examining 1,800 babies per month as part of this study.

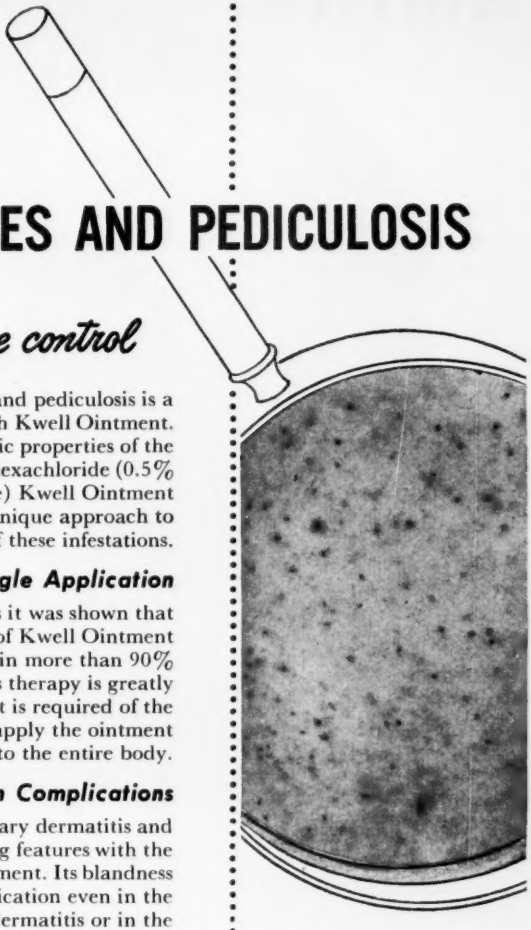
The commission says that these and similar studies in Japan are handicapped by the dearth of background information. For example, in the study mentioned above, parallel examinations must be made of the infants born to parents who were not exposed to atomic radiation.

The medical section of the report is entitled *Atomic Energy and the Life Sciences*. This may be obtained from the U.S. Government Printing Office, Washington 25, D.C., for 45¢.

Conflicting Instructions

Congress not only reduced Atomic Energy Commission funds but also couldn't agree on where the economies should be practiced. The House left the question open, but the Senate instructed the commission to save the money in the medical and other nonmilitary phases. However, the "father of the atomic program," Sen. Brien McMahon (Conn.) took issue with the appropriations committee, which drafted the instructions. He emphasized the importance of research that is not now of obvious military value and pointed out the impossibility of differentiating between the purely peacetime and the military phases of the program.

In all likelihood the commission will not be required to carry out the drastic cuts recommended by Congress. Large sums of money left over from appropriations for this year are available to use in closing the gap.



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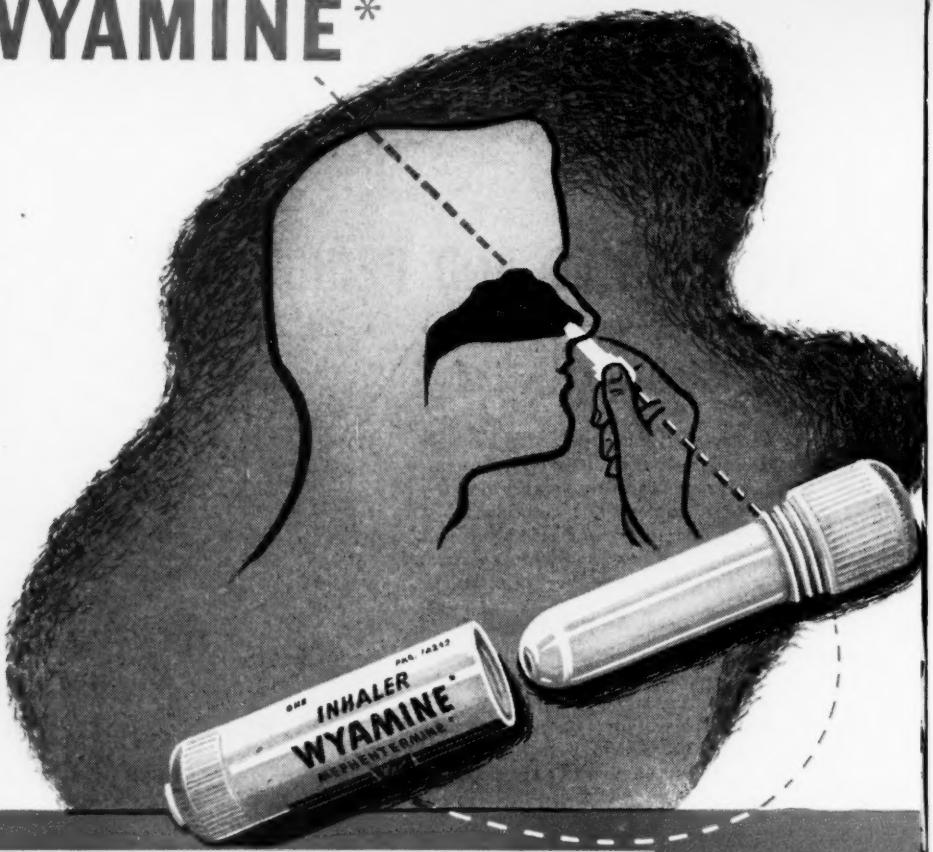

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Symposium on Gastrointestinal Diseases

Foreword

GASTROENTEROLOGY is not a recently circumscribed sphere of practice. About 450 B.C. Herodotus wrote, "The art of medicine in Egypt is thus exercised: One physician is confined to the study and management of one disease; some attend to the disorders of the eyes, others to those of the head, some take care of the teeth, others are conversant with all diseases of the bowels."

The human alimentary canal has interested not only practitioners, internists, and surgeons, but anatomists, physiologists, pharmacologists, biochemists, radiologists, and, lately, psychiatrists. The gastroenterologist, surgeon, or internist must be cognizant of all data concerning the form, structure, and function of the stomach, intestines, and related organs of digestion.

Clinical observations have often anticipated and frequently confirmed investigations which have established patterns of normal and abnormal behavior of the whole or the several parts of the digestive system.

Nutritionists and dietitians are intimately concerned with alimentary performance.

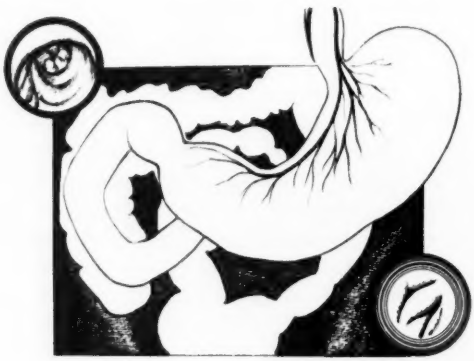
Disturbances of stomach or bowel affect other body parts, and derangement in other systems influences unfavorably the digestive apparatus. Plutarch tells this fable: "It once happened that all the other members of a man mutinied against the stomach, which they accused as the only idle, noncontributing part in the whole body, while the rest were put to hardships and the expense of much labor to supply and minister to its appetites."

This is to say that gastroenterology is a complex study. And all component elements of the subject are not well understood. Some very common disorders have not been satisfactorily explained; the cause of ulcer, the mechanism of ulcer pain, and the etiology of ulcerative colitis are enigmatic. Consequently, treatment of ulcer, or of nonspecific forms of colitis, is not universally standard.

In some instances, notably with cancer of the stomach, therapeutic achievement is greater than diagnostic acuity. Other harmful conditions may be easily recognized, but attempts at correction are inept.

Fads and fancies have often prevented advancement of knowledge in some directions, and logical, reasonable theories have frequently awaited useful application. However, most of the unsolved riddles in gastroenterology are sensibly admitted, and careful, patient resolution of these problems is well under way.

The contributors to the Symposium published in this issue of MODERN MEDICINE elucidate the progress that has been made in the diagnosis and treatment of the most puzzling and intractable diseases of the esophagus, stomach, and colon.



Functional Disorders of the Gastrointestinal Tract

WALTER LINCOLN PALMER, M.D., Ph.D.,*
AND JOSEPH B. KIRSNER, M.D., Ph.D.†
University of Chicago

Prepared for Modern Medicine‡

FUNCTIONAL disorders of the gastrointestinal tract are characterized physiologically by an abnormal irritability of the neuromuscular mechanism of the bowel, variously manifested as hyperperistalsis, hypertonicity, and spasm. The condition has received many designations; the popular terms include nervous indigestion, spastic or mucous colitis, and irritable colon.

ETIOLOGY

The etiologic factors comprise [1] stimuli of psychogenic origin, effects of which are mediated by the autonomic nervous system, and [2] mechanical and chemical stimulants, chiefly irritating food, laxatives, cathartics, and enemas, acting upon the bowel.

The emotional components usually seem to arise from innumerable continuous problems and anxieties of life, instead of from specific precipitating events. But sometimes a direct cause-and-effect sequence is evident.

SYMPTOMS

The symptoms are numerous and diverse, originating at any level of the digestive tract from the esophagus to the rectum.

The most common manifestations include heartburn, belching, flatulence, nausea, vomiting, anorexia, constipation, and diarrhea.

The excessive muscular contractions and localized distention of the bowel lower the threshold for visceral pain and consequently produce abdominal distress. The discomfort varies from an indefinite sensation of bloating and distention to severe, usually cramping pain, constant or intermittent, confined to the upper or lower portion of the abdomen, localized to the right or left lower quadrant, or shifting throughout the abdomen.

Belching, the passage of flatus, or a bowel movement may afford temporary relief. On the other hand, the discomfort may be precipitated or intensified by the taking of food or by defecation.

Headache, pains in the bones and joints, lethargy, general fatigue, nervousness, insomnia, and dizziness are frequent accompaniments. These symptoms likewise originate on a functional basis and are not attribut-

* Professor of Medicine, Frank Billings Medical Clinic, Department of Medicine, University of Chicago.
†Associate Professor of Medicine, Frank Billings Medical Clinic, Department of Medicine, University of Chicago.
‡Based upon chapter on treatment of functional disorders of the colon in F. A. Kyser, editor, "Therapeutics in Internal Medicine," to be published by Thomas Nelson and Sons.

able to constipation or to so-called "intestinal toxemia."

The bowel movements usually are abnormal. Normal defecation is a well-formed collection of feces, an inch or so in diameter, several inches in length, and firm in consistency. The spasticity of the irritable colon may cause prolonged retention of fecal material when excessive amounts of water are absorbed, and evacuation of hard, dry balls or narrow, ribbon-like masses. The stools may contain an increased quantity of mucus, reflecting the degree of irritation.

Constipation may result also from atony of the bowel, as seen in debilitated or elderly individuals, but this is not ordinarily accompanied by abdominal pain. Consequently, the passage of hard, dry feces, especially if painful, usually signifies excessive stimulation and spasm of the bowel, not intestinal inactivity. Hyperperistalsis results in soft, unformed, watery evacuations, the feces traversing the colon too rapidly to permit normal absorption of water.

Pain of the esophagus may be noted as heartburn.

Air swallowing, often associated with constipation, rapid eating, or other evidences of heightened nervous system tension, is common and conducive to loud, continuous belching which does not bring relief.

PHYSICAL FINDINGS

The physical examination usually reveals no abnormality, except for tenderness over the course of the colon, especially in the left lower abdominal quadrant where the descending colon and sigmoid may be palpated as a tender, contracted tube.

Additional findings may include abdominal distention and excessive rumbling and gurgling indicative of increased peristaltic activity.

DIAGNOSIS

Since the symptoms associated with organic disease of the gastrointestinal tract or elsewhere in the abdomen may be similar to those of functional disorders, each patient should have a thorough investigation. This includes a careful history and physical examination, digital palpation of the rectum, proctosigmoidoscopic examination, hemoglobin estimation, blood cell count, urinalysis, examination of the feces for occult blood and parasites, and roentgen study of the digestive tract.

Diagnosis is based upon the following points:

1] History of emotional stress, dietary indiscretion, or excessive use of laxatives and enemas

2] Abdominal distress of the type described

3] Abnormal bowel movements

4] Tenderness over the colon

5] Exclusion of organic disease

TREATMENT

Effective therapy requires a skillful evaluation of the physiologic and emotional factors involved. The specific details of treatment should be adjusted to the needs of the individual, but certain principles are generally applicable.

It is essential first to relieve the patient's anxiety concerning the possibility of serious organic disease. This is best accomplished by a careful, complete examination, as described above.

The patient should be reassured, not scolded or ridiculed. The opinion of "no organic disease" should be accompanied by an explanation of the nature of and reasons for the complaints.

It may be helpful to point out that the condition is common and does not lead to serious consequences. Such superficial psychotherapy, with continued reassurance and the relief of anxiety and fear, usually suffices; some patients may require deeper investigation of their emotional problems by a trained psychiatrist.

Rest is helpful. Eight to ten hours of sleep at night and a rest period during the afternoon are usually adequate.

Hospitalization of several weeks' duration or a vacation away from home may be desirable, depending upon the individual circumstances. The application of heat to the abdomen by means of an electric pad or hot-water bottle seems to lessen the irritability of the digestive tract and relieve discomfort.

Antispasmodics and sedatives are of definite value. Tincture of belladonna, in doses of 10 or 15 drops (0.6 or 1 cc.), or atropine sulfate by mouth, 0.0005 or 0.0004 gm. (1/120 or 1/150 gr.), may be prescribed three or four times daily. Severe cramping abdominal pain often is relieved by 0.001 gm. (1/60 gr.) of atropine, administered hypodermically. The synthetic atropine-like compounds now available do not appear to offer special advantages.

Barbiturates are the most useful of the sedatives. Phenobarbital is given in doses of 0.015 or 0.03 gm. three or four times each day; an effective prescription combines, in tablet form, phenobarbital 0.03 gm. and extract of belladonna 0.0075 gm., taken four times daily. Phenobarbital, 0.1 gm., seconal, 0.1 gm., and similar compounds are helpful in promoting sleep.

Bromides may be substituted, but their use should not be prolonged because of the hazards of bromidism or bromoderma. Codeine sulfate, 0.03 or 0.06 gm., occasionally may be required for the relief of acute, severe bowel distress. However, opiates usually are not necessary and, in fact, are undesirable because they increase the tonicity of the gut and may establish addiction.

For control of air belching and heartburn, positive assurance that organic disease is not accountable, patient explanation of the symptoms, instruction in eating habits and diet, and medicaments to aid relaxation as required usually suffice.

The patient whose symptoms arise from colon dysfunction should be educated to obtain satisfactory bowel movements spontaneously. Laxative preparations, cathartics, and large enemas are to be avoided since they increase the tendency to colonic spasm and pain.

The absence of a bowel movement for several days is of no consequence, if fecal material is not accumulating in the rectum. Warm olive or mineral oil, 3 to 4 oz., may be instilled into the rectum by means of a rubber bulb syringe or a small funnel and catheter, when the bowels have not moved throughout the entire day or whenever the stool has been hard and dry.

The rectum should be examined

daily to make certain that feces are not accumulating. When found, impaction should be broken up digitally and removed or evacuated by large enemas of tap water; oil enemas are of no value for this purpose. Enemas of 0.5 to 1 pt. of water or glycerin suppositories may be used occasionally to stimulate the defecatory reflex or when feces collect in hard masses in the rectum.

The establishment of regular habits is very important. The daily routine should permit sufficient time for a

NONIRRITATIVE, LOW-RESIDUE FOODS

1] *Foods with minimal laxative effect, hence best tolerated in acute disturbances*

Weak tea, rice or barley gruel, meat broth, Cream of Wheat, farina, oven-toasted bread, zwieback, toasted soda crackers with butter, soft-cooked eggs, boiled milk, custard, plain Jello

*2] *More substantial but relatively bland foods*

Cereals with milk or cream: refined rice, Rice Krispies, puffed rice, puffed wheat, corn flakes, oatmeal (well cooked)

Soups: consommé, strained chicken broth, strained vegetable, strained cream of rice, strained cream of potato, strained cream of celery, strained cream of mushroom, cream of tomato

Cheese: cream, American, Swiss, cottage

Fish: salmon, tuna, whitefish

Fowl: chicken, turkey, squab

Meats: crisp bacon, beef, veal, lamb, ham, liver (broiled, boiled, roasted, baked)

Miscellaneous: macaroni, noodles, spaghetti, vermicelli

Potatoes: baked, mashed, au gratin, escaloped

Breads (white): toast, croutons, bread sticks, milk toast

Milk products: milk, cream, butter

Other beverages: tea, coffee, Postum

Desserts: custards—vanilla, caramel, rice
puddings—bread, tapioca, cornstarch, cottage, snow
cakes—angel food, icebox, plain, sponge
cookies—arrowroot, Hydrox, Peter Pan, vanilla wafers
pies—lemon cream, custard, banana cream, cocoanut cream, Boston cream, or chocolate pie may be added when symptoms subside
other—floating island, éclairs, cream puffs, Spanish cream, lady fingers, plain Jello, vanilla ice cream

3] *Cooked or canned vegetables, more laxative chiefly because of greater residue*

Asparagus, string beans, carrots, spinach, sweet potatoes, peas, beets, tomatoes, squash

4] *Cooked or canned fruit, more laxative because of chemical irritants*

a] Prunes, peaches, applesauce, apricots, pears, baked apple, cherries

b] Figs, plums, dark cherries, berries, grapes, pineapple, rhubarb

leisurely breakfast and a bowel evacuation.

DIET

The dietary management is based upon the varying irritant or laxative qualities of different foods. All food and drink is more or less stimulating to the digestive tract; however, there are pronounced differences, quantitative and qualitative, mechanical and chemical, in the effects of various foods.

Raw fruits and vegetables, fruit juices, spices, seasonings, candy, and carbonated and alcoholic beverages increase spasticity of the stomach and bowel and aggravate symptoms. The diet, therefore, should consist of easily digestible and nonirritating substances listed in the table.

The diet should be adjusted so as to produce firm, formed stools instead of hard or liquid evacuations. Usually, two liberal servings each of cooked or canned fruit and vegetable may be allowed daily. The quantity may be increased if the feces are hard and dry; the fruit and vegetable may be omitted entirely if the stools are soft or watery.

Patients who have constipation but without abdominal distress may take ripe tomatoes and lettuce in moderation.

This diet in ample quantities is nutritionally adequate; supplemental vitamins may be permitted if desired by the patient. The program is continued for several weeks or months, longer if necessary. Many patients are benefited by some form of dietary restriction indefinitely.

For acute bowel distress with severe diarrhea, all food by mouth may be omitted for twenty-four hours; the fluid balance may be maintained by the intravenous administration of 5% glucose in isotonic saline solution. Very bland foods such as broth, weak tea, boiled milk, toast, Cream of Wheat, soft-boiled eggs, custard, and Jello are then added. The diet is enlarged gradually as recovery ensues.

The persistence of symptoms during therapy should arouse suspicion of unrecognized organic disease or an unsolved emotional problem and instigate further study and treatment. The outlook in the majority of cases is good. The skillful, continued application of the foregoing principles to a cooperative patient usually restores normal bowel function, with gratifying relief of symptoms.

GLUCOSE TOLERANCE CURVES with peptic ulcer resemble those of carbohydrate starvation, apparently because postabsorptive utilization of glucose is at fault. Liver function may be impaired or insulin sensitivity lacking. Abnormal values were noted after both oral and intravenous administration by Warren D. Platt, Jr., M.D., Louis B. Dotti, Ph.D., and Robert S. Beekman, M.D., of St. Luke's Hospital, New York City. But hypoglycemic symptoms occurred in subjects with and without ulcer, even when blood sugar values were not critical.

Gastroenterology 13:20-30, 1949.

Diagnosis and Treatment of Surgical Esophageal Lesions

ALTON OCHSNER, M.D.*
Tulane University, New Orleans

Prepared for Modern Medicine

ALTHOUGH of relatively infrequent occurrence, *congenital anomalies of the esophagus* can and should be recognized immediately after birth.

The most common esophageal defect is atresia, associated with a communication between the lower end of the esophagus and the respiratory tract, either the trachea or the bronchi. Routine catheterization of the esophagus by the obstetrician immediately after delivery will demonstrate esophageal atresia. This should be done before feeding is allowed, because of the danger of aspiration. Surgical reestablishment of the normal continuity of the esophagus is possible and should be done before anything is taken by mouth.

The three most important *acquired esophageal lesions* are carcinoma, benign strictures due to ingestion of corrosive substances or to nonspecific esophagitis, and achalasia. All of these produce severe nutritional disturbances because of obstruction of the esophageal lumen.

Unfortunately, the early symptoms of esophageal carcinoma are extremely vague and may be disregarded by the patient. Dysphagia, which is commonly considered an early manifestation, is in reality a late one and, because of the ability of the esophagus to dilate during swallowing, is experienced only after considerable obstruction. The consciousness by an individual of sensations in the esophagus justifies investigation by the physician, for only by examination of such a person can lesions be detected early.

Carcinoma of the esophagus is a formidable disease because of the likelihood of rapid extension of the growth to the mediastinum and because of metastases to regional lymph nodes. The close proximity of the esophagus to vital mediastinal structures, such as the trachea, the aorta, the pericardium, and the vena cava, is the mandate for early diagnosis and prompt eradication of the lesion.

Benign cicatricial stenosis of the esophagus is also attended with profound nutritional disturbances. If the constriction is extreme, saliva may accumulate in the upper esophageal segment and mouth and overflow into the trachea and bronchi, with consequent pneumonitis and eventual bronchiectasis. The latter complications are serious. A history of inges-

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tion of corrosive substances is important for the diagnosis of benign stricture, since most benign strictures follow corrosive esophagitis.

Achalasia, or cardiospasm, is due to failure of relaxation of the cardiac end of the esophagus or to persistent spasm of the circular musculature and concomitant hypertrophy, dilatation, and elongation of the esophagus. The disease is characterized by paroxysmal attacks, the patient being able to swallow normally at times and having almost complete obstruction at others. Whereas the esophageal block by benign or malignant strictures is usually progressive, this is not the case with achalasia. Achalasia affects women more frequently than men and usually occurs in neurotic individuals.

DIAGNOSIS

Accurate diagnosis of esophageal lesions is usually possible because the esophagus is exceptionally easy to visualize, indirectly by roentgenography following ingestion of contrast substances, and directly by esophagoscopic examination.

Roentgenography, because of its simplicity, can usually be done without danger, unless the obstruction is complete. When there is danger that barium may be aspirated into the lungs, particularly in an infant, use of a contrast substance such as lipiodol which is not irritating to the tracheobronchial mucosa is advisable. Lipiodol is especially indicated in suspected congenital atresia.

By fluoroscopic observation of the passage of a contrast substance through the esophagus, the roentgenologist can determine changes in contour, alterations in the outline of the esophageal mucosa, and the site of obstruction. Frequently he is able to predict the type of lesion involving the esophagus.

Although definitely more hazardous than roentgenographic visualization of the esophagus, endoscopic examination is more valuable as a diagnostic procedure because of the opportunity for direct inspection of the lesion and removal of a piece of tissue for microscopic study. If no suspicious lesion is seen which lends itself to biopsy, the aspiration of esophageal secretions for cytologic examination is possible.

THERAPY

Treatment of esophageal lesions is determined by the nature of the disease.

The therapy for esophageal carcinoma is radical resection of the involved esophagus. Because of the tendency of carcinoma of the esophagus to invade great distances beyond the original site, the esophagus should be excised well beyond the macroscopic limit of growth. This frequently requires removal of the entire thoracic, abdominal, and cervical esophagus.

Reestablishment of the digestive tube can be accomplished by an esophagogastrostomy. Even though the end results of esophageal resection and esophagogastrostomy are not as good with ma-

lignant as with benign lesions, earlier diagnosis and institution of radical therapy at a time when the growth is confined to the esophagus will better the results.

Most cases of achalasia can be improved by conservative means, consisting of psychotherapy and repeated dilatations, but for many, a radical procedure is necessary. This is particularly true for individuals with extreme obstruction and considerable dilatation of the esophagus with esophagitis. The operative procedure indicated for resistant achalasia is a plastic procedure at the cardiac orifice or an esophagogastrostomy. From our own experience we believe the latter operation is safer and more satisfactory.

Benign strictures of the esophagus may be treated conservatively. Repeated dilatations, usually over a string, have been done, but at the present time, surgical opinion favors resection of the constricted portion and reestablishment of the continuity of the digestive tube, either by direct esophagostomy or by esophagogastrostomy. The results are satisfactory.

Mechanism of the Dumping Syndrome

THOMAS E. MACHELLA, M.D.*

POSTPRANDIAL dumping symptoms occurring early after subtotal gastrectomy result from jejunal distention by fluid exuded into the bowel wall to reduce the hypertonic state of the intestinal contents.

Hyperglycemia is not a factor, in the opinion of Thomas E. Machella, M.D., of the University of Pennsylvania, Philadelphia. Patients are affected at the end of a mixed meal, when blood sugar is high, and after oral doses of glucose or sucrose, but not after intravenous injection of glucose.

In persons with intact or partially resected stomachs, dumping reactions occur when hypertonic solutions of glucose, protein hydrolysate, or sodium sulfate are instilled into the jejunum, and also after jejunal distention by a balloon. Similar effects follow injection of 33% magnesium sulfate into the duodenum.

To produce symptoms, a meal must contain sugar, salt, or protein ingredients of high osmotic pressure, over 300 milliosmols. Just enough fluid must be taken to form a strong solution, capable of drawing liquid from the blood stream into the bowel.

Epigastric distress, weakness, palpitation, and vertigo are prevented by omission of fluid from meals or by a dose of atropine before food, but not by vagotomy. Symptoms are alleviated by lying down, since jejunal contents flow back into the gastric pouch.

* The mechanism of the post-gastrectomy "dumping" syndrome. Ann. Surg. 130:145-159. 1949.

Medical Treatment of Gastric and Duodenal Ulcer

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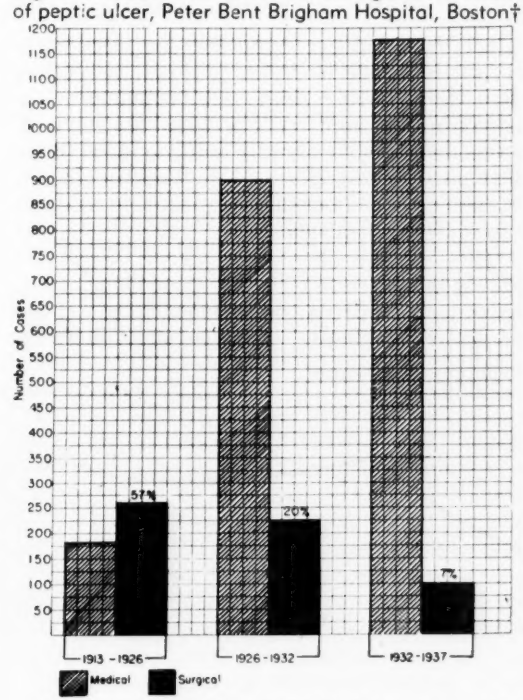
Rochester, Minn.

Prepared for Modern Medicine

PHYSICIANS and surgeons are generally agreed that uncomplicated gastric and duodenal ulcer, particularly the latter, should first be treated medically. The trend from surgical to medical management over almost three decades in a representative Eastern hospital is shown in Figure 1.

Fig. 1. Incidence of medical and surgical treatment of peptic ulcer, Peter Bent Brigham Hospital, Boston†



†Zollinger, Robert *Rhode Island M. J.* 21:113-117. 1938.

In 1943 Lahey and Marshall reported operations for 6.5% of a total of 6,500 patients who had duodenal ulcers, and 18% of 450 with gastric ulcers. The trend of the percentage of operations for all duodenal ulcers at the Mayo Clinic from 1928 through 1943 is shown in Figure 2. This trend persists. However, surgery continues to be done for about 60 in every 100 patients with gastric ulcer (Fig. 3).

One of the basic factors in the successful treatment of ulcer is correct diagnosis. Many conditions, functional, reflex, and organic, may give rise to gastric disturbances which completely or partially simulate ulcer.

Granting that the symptoms and signs presented by the patient are consistent for chronic ul-

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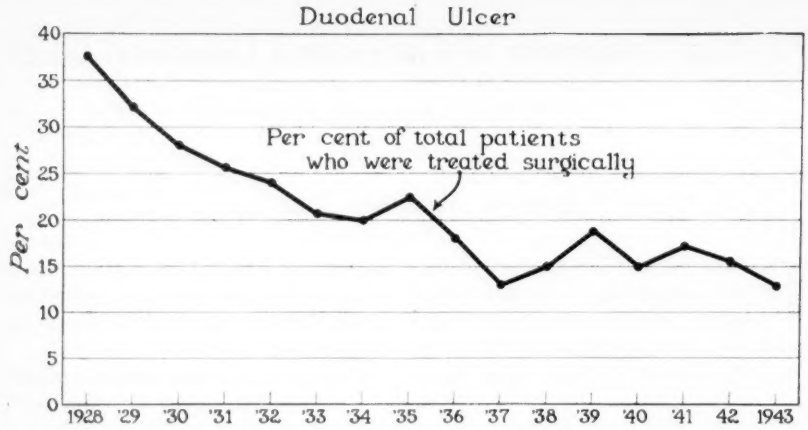

Fig. 2. Trend of surgical treatment of duodenal ulcers, Mayo Clinic, 1928-1943

cer, the diagnostic aid supplied by the roentgenologist or endoscopist is in direct proportion to his skill and experience. The roentgenologic error is largely one of omission. Even the most expert radiologist will be remiss when obliged to work at too fast a pace or when he has become unduly fatigued.

A negative finding is more likely in the early than in the late stage of the disease. Nevertheless, with subjective evidence distinctive for ulcer, treatment for this condition should be initiated, with the expectation of prompt relief of symptoms if the digestive disorder is due to ulcer. In any event, effects of the therapy, whether good or otherwise, will help to clarify the diagnosis.

THE GASTRIC LESION

Given the roentgenoscopic or gastroscopic verification of an ulcer, the

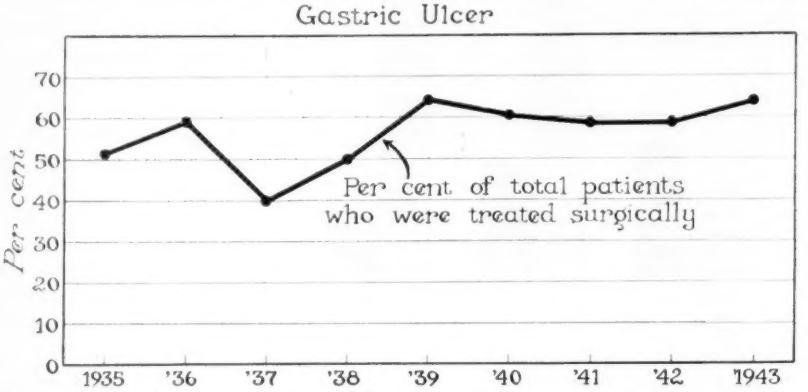

Fig. 3. Trend of surgical treatment of gastric ulcers, Mayo Clinic, 1935-1943

next fact of interest is the location of the lesion. Even the physician of limited experience in this field is quick to realize that the ulcer will probably be duodenal. As a matter of fact, in this country he will encounter 12 to 15 such ulcers to 1 gastric ulcer. On occasion both may be present in the same individual.

Because of certain deterrent factors, chiefly psychosomatic and secretory, the physician may have more difficulty treating a duodenal ulcer than a fairly early gastric ulcer, but with the former he need not worry about the possibility of carcinoma. Because 10% or more of carcinomas of the stomach masquerade as benign ulcers, many representative surgeons in the United States have urged immediate operation for gastric ulcer, with but few exceptions.

Lahey, for example, recently completely reversed his previous ultraconservative attitude by advising operation for *all* gastric ulcers. In the United Kingdom, where such lesions are much more prevalent than in this country, the very opposite viewpoint largely prevails among physicians and surgeons alike.

However, it is the better part of wisdom for the physician to exercise caution in the treatment of any gastric lesion and to be on guard, particularly in the presence of certain symptoms and signs which may be summarized as follows: recent onset of symptoms in an elderly patient; large size of the lesion; location of the ulcer on the greater curvature or in the prepyloric area, and to a less extent, exclusively on the anterior or the posterior wall; progressive clinical course; achlorhydria and low secretory volume of ten- to fifteen-minute specimens fractionally withdrawn; early pyloric obstruction; increase in size of lesion during course of adequate treatment or early recurrence of lesion following such treatment; persistence of occult blood in feces when diet is controlled; roentgenographic demonstration of a meniscus sign with the ulcer crater; and gastroscopic appearance of an elevated lesion with edges or rim blending with mucosa, the irregular floor of the crater being of a brownish red, violet, gray, or dirty color and perhaps containing nodules, nodes, or ridges.

CHOICE OF TREATMENT

Because of disagreement concerning the cause of ulcer and the fact that prevailing methods may not be completely satisfactory on every occasion, innumerable cures have been suggested. Such remedies today range from pituitary "snuff" to fresh cabbage juice! Many of these so-called cures are in vogue for short periods of time and are then discarded as other futile predecessors have been. Past experiences have repeatedly taught me to be just as suspicious of ulcer cures as of purported cures for cancer and tuberculosis. Parenteral methods of treatment have also been ineffectual.

The evaluation of unorthodox forms of treatment is often difficult because some ulcers heal spontaneously, and many heal after little treatment. Moreover, the clinical course of the disease is characterized by variable periods of remission and exacerbation, and such remissions, especially if prolonged for one reason or another, can easily lead to a false ap-

praisal of the value of the type of treatment instituted. Symptomatic relief is no criterion of healing.

There must be demonstrative anatomic restoration of mucosa, especially in the case of gastric ulcer. The bulbar defect of a duodenal ulcer of several years' duration may persist after complete healing has taken place. The crater of an ulcer will fill with reparative tissue within a period of fifteen to forty-five days or longer, but additional time is required before transformation to normal mucosa occurs. The apparent disappearance from the roentgenogram of a gastric niche may be due to lodgment in the crater of a plug of mucus, a blood clot, or food. The most reliable evidence of healing of a gastric ulcer is afforded by gastroscopic examination.

Recent progress in the treatment of ulcer has been notable for the introduction of aluminum preparations, continuous intragastric drip, Meulengracht's principle of prompt and frequent feeding following hemorrhage, protein hydrolysates, the psychosomatic approach, and vagotomy. Vagotomy is purely a surgical procedure and will be omitted from present consideration.

The logical therapeutic procedure, in my opinion, is one that takes into consideration the results of experimental research in the production of ulcer, the morbid physiologic processes associated with an active ulcer, and the lessons gleaned from clinical observation. On those bases, the majority of physicians subscribe to the principle of a bland, soft, and nutritious diet devoid of chemical, mechanical, and thermal irritants; frequent feedings; antacids; temporary use of sedatives and antispasmodics; physical and mental rest; and other auxiliary measures when indicated.

Although corrosion or digestion by the acid gastric juice is unlikely to be the sole factor in pathogenesis, the effectiveness of neutralizing agents should not be disregarded. Dragstedt has recently reemphasized the noteworthy fact that the medical management of peptic ulcer, particularly duodenal ulcer, has been successful directly in proportion to the degree in which the acid gastric juice has been neutralized during the entire twenty-four hours. Successful surgical treatment is based on the same premise.

CHOICE AND EFFECT OF ANTACIDS

The use of nonabsorbable preparations of aluminum hydroxide in the form of liquid gel or tablets has largely replaced the administration of the salts of sodium, calcium, magnesium, and bismuth, which are capable of systemic absorption, with consequent well-known hazards. Aluminum hydroxide also has adsorptive, bactericidal, mild astringent, and demulcent properties. Because of a tendency to produce constipation, the preparation should be prescribed with magnesium trisilicate or milk of magnesia. A convenient substitute for the inter meal milk feeding when the patient is ambulant is a tablet made of compressed milk combined with calcium carbonate (neutrachloric tablet).

The degree of neutralization of gastric acidity which is necessary for ordinary purposes is achieved at the so-called proteolytic neutralization point, that is, at a *p*H of 4.5 to 5. Adequate neutralization throughout the

day and night is exceedingly difficult to attain in 80% of cases except by continuous intragastric drip. In spite of this fact the majority of properly chosen patients experience relief and the ulcer frequently heals without resort to the drip method.

RATIONALE OF SEDATIVES AND ANTISPASMODICS

Since many ulcer-bearing patients are nervous, tense, hyperactive, and irritable, their sleep is not restful and they are usually mentally and physically exhausted. Theoretic considerations imply hyperirritability of the dorsal vagus nucleus. The effect following successful bilateral vagotomy emphasizes the importance of the cephalic phase of gastric secretion in such patients.

Hence, the indication for drugs having a central effect, such as barbiturates and calcium, as well as drugs that act peripherally, as do those of the atropine group. While treatment in the hospital affords complete rest and relaxation, which is conducive to healing, nevertheless, the circumspect use of sedatives and antispasmodics is indicated from the outset to facilitate recovery. Such medication is even more imperative for that perhaps too great majority of patients treated in an ambulatory way.

Certain precautions are necessary in the use of drugs of this nature. The idiosyncrasy of many persons toward belladonna and its derivatives is well known. The pharmacologic effect is unpredictable. Moreover, the amount of sedation required to achieve the desired effect without impairing the patient's efficiency is a variable one.

The problem is that of proper dosage of suitable barbiturates and antispasmodics in harmonious combination. This dosage and combination should not only provide maximum effect but should be in such proportions that the preparation may be used for as long as seems indicated. A tablet containing extract of belladonna and pentobarbital sodium (nembutal) is routinely ordered by some of my associates. One of my favorite combinations is a powder or capsule containing 0.25 to 0.5 gr. (16 to 32 mg.) of phenobarbital, 1/24 gr. (2.7 mg.) of homatropine methyl bromide, and 20 gr. (1.3 gm.) of calcium gluconate.

AMBULATION *vs.* HOSPITALIZATION

Shall the patient be treated in ambulatory fashion or be sent to the hospital? Authoritative opinion is divided on this point as on many others in the realm of gastroenterology.

Treatment and observation in the hospital are indicated, as a rule, under the following circumstances: when the lesion is gastric in location; when some complication such as occult or gross bleeding exists or is impending; when there is perforation or undue retention of gastric contents from any cause; when the pain is severe or more or less persistent; when the patient is very nervous, exhausted, or hypersensitive or it is improbable that he will adhere strictly to an ambulatory regimen; or when it is essential that the patient be relieved of the care of office, farm, or home, for only in a hospital can mental, emotional, and physical rest and adequate cooperation be secured and effective treatment carried out at the same time.

However, the fact remains that, for obvious reasons, most patients are treated in ambulant fashion, and those who have uncomplicated ulcers with moderate symptoms usually do very well.

But in my considered judgment the management of the majority of patients coming under my observation has been inadequate. This is regrettable, because proper treatment instituted at an early stage of the disease is the best guarantee of permanent cure with the least expenditure of time, effort, and money. Relapses and chronicity favor increase in size and depth of the lesion, progressive formation of scar tissue, perigastric or periduodenal adhesions, and slow perforation into contiguous organs or tissues—factors deterrent to permanent cure.

One is reminded of Moynihan's criticism—that the failure of medical treatment was attributable to its inefficiency and that few patients received any treatment which offered a reasonable prospect of healing the ulcer. Such inadequacy is revealed in publications in the past half decade which disclose the high rate of recurrence of symptoms in patients treated conservatively.

For a detailed description of the ritual of treatment, which the space allotted for this article does not permit, the reader is recommended to consult any recent available treatise dealing with a complete regimen, as, for example, the chapter by Palmer in Portis' textbook. For details concerning the medical treatment of hemorrhage, pyloric obstruction due to spasm and edema, alkalosis, and dehydration consult my article on peptic ulcer, in *Nelson's Loose Leaf Medicine* (volume 5, chapter 10, 1946).

PREVENTION OF RECURRENCES

To heal the lesion is the first objective, and to keep it healed or prevent a recurrence at the same site or elsewhere is the second objective. Not only is the latter more difficult to achieve, as a rule, than the former, but its importance has not been stressed sufficiently in the past. Whether we regard ulcer as a thing unto itself or as the manifestation of a chronic local disease or of a general systemic derangement, the patient as a whole must be encompassed in our therapeutic planning.

This, apart from a complete physical inventory, presupposes tactful inquiry into the psychosomatic and environmental aspects of the case and into the patient's personal habits and mode of eating. In addition, one must stress the baneful influences of emotional tension, physical fatigue, respiratory infections, alcohol, tobacco, condiments, caffeine-containing beverages, stimulating or coarse foods, and hurried improper mastication. The institution of a protective regimen during periods of stress is an essential precaution. Continued cooperation with respect to diet, medication, and hygiene is usually achieved only by fully acquainting the patient with the nature of his disease and with the rationale underlying his treatment.

There is much justification for the old adage: "Once an ulcer patient, always an ulcer patient." The tendency for the patient to throw off all restraint after he has experienced comfort for several weeks or longer must be zealously guarded against.

Vagotomy: Indications and Results

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Prepared for Modern Medicine‡

COMPLETE division of the vagus nerve supply to the stomach as a treatment of peptic ulcer was introduced in the University of Chicago Clinics in 1943. Since then, 525 of these operations have been performed there. While six years is too short a period of observation for final conclusions, the results to date have been so satisfactory that this form of treatment has replaced other types of surgical therapy for ulcer at the Chicago Clinics.

As in the early stages of any new procedure, evolutionary changes in technic and indications have been made.

Transthoracic vagotomy was first replaced by simple transabdominal vagotomy. This approach permits the surgeon to inspect the lesion directly. Posterior gastroenterostomy was added in cases that had evident pyloric stenosis.

At present, gastroenterostomy is performed routinely in all cases. The temporary troublesome symptoms related to early overdistention of the vagotomized stomach are largely ameliorated, and the postoperative management of the patient is thus greatly simplified.

INDICATIONS

With increasing experience and confidence in the operation, the indications for vagotomy have been expanded. At first only those patients who had proved intractable to prolonged and adequate medical management were considered candidates for vagotomy. The operation was offered as a less radical substitute for subtotal gastrectomy.

At present, although we do not believe that it is advisable to recommend vagotomy for every duodenal ulcer patient, we have expanded our criteria to cover all patients whose symptoms are not controlled by any medical measures which they are willing and able to follow continuously. In other words, practical consideration is given to the patient's ability to cooperate with the prescribed regime. For a patient who has repeated recurrences, we feel that the risk of vagotomy is less than the risk of an eventual serious complication.

The presence of complicating factors, such as perforation, obstruction, or hemorrhage, modifies the indication for vagotomy. Because the incidence of bleeding is known to increase with each episode of hemor-

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rhage, and the mortality rate to rise sharply with the advancing age of the patient, we recommend surgery after a short period of medical management for cases of recurrent bleeding.

We do not recommend, however, that vagotomy be performed at the time of acute perforation or hemorrhage. With active bleeding, vagotomy is especially contraindicated. If vigorous medical management fails to control the bleeding, vagotomy cannot be expected to do so. The effects of both methods of treatment are passive; that is, when acidity is decreased and motor activity reduced, conditions favorable to clotting and healing are established. When active bleeding continues, direct attack upon the bleeding vessel is mandatory.

For the complication of pyloric stenosis, we advise gastroenterostomy combined with vagotomy. Simple gastroenterostomy does not suffice, since stomal ulcers will develop in a large number of such patients.

Gastrojejunal ulcers, or stomal ulcers, are pathogenetically similar to duodenal ulcers, and gastrojejunal ulcers are notoriously resistant to the usual forms of medical management. Consequently we believe that simple vagotomy is preferable to extensive and complicated resection.

In considering gastric, as distinguished from duodenal ulcer, the inability of the clinician or surgeon to differentiate between benign and malignant ulcer of the stomach is well known. Furthermore, hypersecretion of neurogenic origin usually does not occur with gastric ulcer. Since subtotal gastric resection may be advantageous should subsequent examination prove the lesion to be malignant, resection instead of vagotomy is advisable for stomach ulcers.

A word of warning should be given: Objective evidence of excessive secretion and roentgenographic demonstration of ulcer, together with typical symptoms, should be ascertained before decision for vagotomy is made. Some have recommended vagotomy for patients with bizarre complaints that do not abate with medical management. Such a course cannot be too heartily condemned. These patients may not have peptic ulcers. The symptoms may arise from functional bowel disturbance and are not benefited, but often made much worse, by vagotomy.

RESULTS

A total of 525 vagotomies for peptic ulcer had been done by June 1, 1949, at the University of Chicago Clinics. Results in 79% of these operations have been excellent, as judged by objective evidence of healing of the ulcer, complete absence of pain or distress without diet restriction or medication, weight gain, and ability to return to usual occupations.

In 9% the results have been fair. In this group of patients the ulcers have healed, but side effects of the operation have been disagreeable and troublesome.

In 13% the results have been poor because the ulcer has not healed or has recurred or the side effects have been so disabling that other surgery has been necessary. Included in this number are 8 postoperative deaths, a total mortality of 1.7%.

Of the total 525 vagotomies, 88% were performed for duodenal ulcer, 4% for gastric ulcer, 2% for combined gastric and duodenal ulcer, and 6%

for jejunal ulcer. The results for duodenal and jejunal ulcer have been quite similar: 81% excellent, 11% fair, and 8% poor for duodenal; and 77% excellent, 13% fair, and 10% poor for jejunal ulcer.

On the other hand, the results for gastric or combined gastric and duodenal ulcer have been much less satisfactory: 48% excellent, 33% fair, and 19% poor for gastric ulcer alone; and 62% excellent, 25% fair, and 13% poor for combined gastric and duodenal ulcer.

It is extremely noteworthy that no duodenal or jejunal ulcer has failed to heal or has recurred or that no new ulcer has developed when the vagotomy has been complete as measured by physiologic tests. In contrast, after complete vagotomies, 4 gastric ulcers have developed or recurred, and 2 Mann-Williamson type of ulcers have occurred.

Most of the disagreeable side effects have been related to obstruction or stasis of the vagotomized stomach. Stasis and the greatly reduced acidity of the gastric contents permit unrestricted growth of bacteria and the formation of malodorous gases and irritating diarrhea-producing substances. These complications have been very largely abolished by the routine use of gastroenterostomy, as is evident from a comparison of results following simple vagotomy with those after vagotomy with gastroenterostomy.

A total of 245 simple vagotomies were performed, of which 79 were transthoracic and 166 transabdominal. From these, results were excellent in 65%, fair in 14%, and poor in 21%.

On the other hand, of 280 patients with vagotomy and gastroenterostomy, 91% obtained excellent, 4% fair, and 5% poor results. If, however, stasis symptoms are discounted in the first group, results could be considered as good in 85%.

With addition of gastroenterostomy to vagotomy postoperative management has been simplified and the period of stasis lessened.

A NEW CURARE-LIKE AGENT, dimethyl ether of d-tubocurarine iodide (M-curare), is capable of producing adequate muscle relaxation during surgery with only an occasional slight degree of respiratory depression. V. K. Stoelting, M.D., J. P. Graf, M.D., and Z. Vieira, M.D., of Indiana University, Indianapolis, believe that M-curare is superior to curare. Muscles relax readily with M-curare and the duration of action exceeds that of *d*-tubocurarine. M-curare is satisfactory for all operations except those requiring controlled respiratory movements. No cardiovascular or cerebral damage or postoperative complications could be attributed to use of the drug in 225 surgical operations.

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Management of Gastric Hemorrhage

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IN discussing gastric hemorrhage, we do not refer to a single observation of a tarry stool, which may come from as little as 60 cc. of swallowed blood, or to a blood streak on vomitus. Loss of less than 300 cc. of blood rarely causes general symptoms.

Gastric hemorrhage requiring special treatment is accompanied by weakness, dizziness, faintness, chilliness, sweating, restlessness, thirst, and moderate or more pronounced dyspnea. Physical findings include those of slight or severe shock, such as rapid pulse, low blood pressure, and subnormal temperature. These symptoms may precede or follow the vomiting of a large quantity of blood, the passage of sticky, tarry stools, or both events.

The source of the blood in over 80% of cases is bleeding peptic ulcer, but the hemorrhage may also result from bleeding esophageal varices, ulcerating neoplasms of any part of the gastrointestinal tube, erosive inflammatory areas, vascular lesions, blood dyscrasias, severe toxemias, syphilitic or tuberculous lesions, and allergic reactions. In the case of a peptic ulcer, the bleeding may be caused by mucosal erosions from severe gastritis accompanying the ulcer and be of short duration or may originate from the ulcer crater, as surface oozing or sloughing of a vessel, and be more or less persistent. Bleeding from a vessel held open by horny, indurated ulcer scar may result in exsanguination.

In general, the principles governing treatment of the hemorrhage are the same, so that it is safe to start therapy in all cases as if the bleeding were due to ulcer, even though later diagnosis may show some other cause.

The *symptoms* of severe hemorrhage, mentioned before, are often attributed to "ptomaine poisoning" or to a "heart attack" if no blood is noticed in the loose stool or vomitus. This often occurs when the patient uses the toilet in the night without turning on a light. We noted previous ulcer symptoms in over 80% of our cases and previous hemorrhages in 39%; two or more hemorrhages had occurred in 9%. Only 14% had hemorrhages as the first symptom of ulcer.

A sudden severe hemorrhage in a patient of middle age suggests carcinoma. Hemorrhage after operation on the stomach does not necessarily indicate a marginal ulcer. With chronic alcoholism, bleeding esophageal varices should be thought of, al-

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though an ulcer may be present. Bleeding from other mucosal areas or under the skin suggests blood dyscrasia. A careful history may disclose other possible sources of bleeding. Swallowed blood from hemorrhage along the respiratory tract may be vomited or appear as melena.

Examination should not at first be too exhaustive but should be sufficient to determine whether the bleeding originated in mouth, nose, or throat; to detect masses in the abdomen, rectum, or pelvis, and signs of perforation; and to ascertain the status of the patient's cardiovascular renal system. All stools should be tested for occult blood until this disappears.

Blood counts should be done at two- or three-day intervals, although they are not as good indicators of continuous bleeding as are blood pressure readings. The systolic pressure usually drops for twenty-four or forty-eight hours after the hemorrhage, then rises if bleeding has ceased. The pulse rate also reflects progress of hemorrhage. Persistent azotemia, usually about 30 mg. of urea nitrogen per 100 cc. of blood, but often as high as 70 mg., is also a result of continued or recurrent blood loss, although such a finding should also engender suspicion of a complicating renal condition. Hematocrit studies must be used to corroborate the blood findings.

While a flexible stomach tube can be passed with comparative safety to aspirate bloody gastric contents, fractional gastric analysis should be postponed for a week or ten days. The usual findings with ulcer are hypersecretion and traces of blood in gastric or duodenal contents.

Endoscopic examination should, if possible, also be deferred, although the esophagoscope may be used when varices are considered a possible source of hemorrhage. If found, varices may be injected or compressed. Erosions or hemorrhagic purpuric areas may be discovered by the gastroscope as a cause of bleeding and the proctoscope may be of use.

Roentgenologic study has been done early at times with no harmful effects but should be deferred until aspirations from the stomach are devoid of blood. After two weeks small ulcers may be well healed and consequently not demonstrable. Careful esophageal study, gastric films made in several positions, barium enema, and cholecystography should eventually be performed to provide complete knowledge of the patient's gastrointestinal status.

Treatment must take into consideration nature's method of controlling hemorrhage. Except in the presence of blood dyscrasia, which may impair coagulation, all factors favoring blood coagulation are augmented and the bleeding is stopped because of the formation of blood clots in the bleeding vessel or vessels or on the oozing surface.

To prevent clots from being blown out and recurrent hemorrhages, natural shock reactions encourage the maintenance of a low blood pressure and volume as a protective process.

The accumulation of blood in the stomach stimulates secretion of gastric juice but also prevents the corrosive activity from destroying the newly formed clots. When this sanguineous fluid is passed through the pylorus or vomited, the patient becomes hungry or thirsty, demonstrating the na-

tural demand for substance to combine with the gastric juice and protect the clots. This sequence of events explains the good results from early feeding.

When the stomach is filled, the intermittent hunger contractions of an empty stomach which tend to aggravate bleeding are prevented. Restlessness and anxiety which provoke hunger contractions may be allayed by a feeling of confidence in the doctor.

Chilling of the body by ingestion or application of ice will increase discomfort, stimulate circulation, and interfere with clot formation. Insult to the gastric mucosa by irritating foods or drugs is harmful. Sudden increase in blood volume by injudicious intravenous injections of any substance, including blood, may dislodge well-formed clots.

Mental and physical *rest* should be attained by calm explanation of the reasons for all procedures, confinement to bed for about ten days, and possible use of light sedation, preferably not morphine.

Shock should not be too strenuously treated. Heat is applied to cold feet, though not enough to cause sweating. The Trendelenburg position is assumed if evidence of cerebral anemia appears but, preferably, no stimulants or intravenous injections are given.

Severe anoxemia, manifested by air hunger, rapid, thready pulse, and falling blood pressure, may injure heart muscle. Transfusions of 200 cc. of blood at intervals of a few hours may correct this condition, but administration of large amounts may cause more bleeding.

When continuous hemorrhage that threatens exsanguination is suspected, surgical consultation should be sought, although the prognosis is not good with either medical or surgical care. Persistent hemorrhage is usually due to bleeding vessels held open by horny induration. In a few instances patients in this condition have been saved by continuous slow transfusions of 6 to 8 liters of blood for twenty-four to thirty-six hours.

Anemia usually improves spontaneously, but hematinics may be of use. Transfusions given in a week or ten days, when clots have become organized, are usually not harmful.

Feedings should be started at once and be given frequently, day and

DIET FOR GASTRIC HEMORRHAGE

Food	*Amount*	*Carbohydrate*	*Protein*	*Fat*	*Calories per liter*
Gelatin	50 gm.		45 gm.		130
Dextrose	60 gm.	60 gm.			240
Cream (20%)	100 cc.	3 gm.	3 gm.	18 gm.	180
Milk	900 cc.	36 gm.	27 gm.	27 gm.	550
		99 gm.	75 gm.	45 gm.	1,100

Milk, cream, and dextrose are mixed together and kept in the refrigerator.

Gelatin, in the amount of 50 gm. per liter of the mixture or approximately 75 gm. per day, is kept in a paper cup at the bedside and added at each feeding as follows:

A rounded teaspoonful, dissolved in 1 or 2 oz. of warmed milk mixture, is added to remaining cold mixture, making a cool, palatable drink. If the patient prefers, the drink may be warmed. A little flavoring (tea, vanilla, cocoa) may be added if desired.

night. Occasionally, feedings may be skipped in the night if the patient is asleep. Nutrients taken should be soothing, coagulant, and combine readily with gastric juice. The mixture given in the table, a modification of one used by us for thirty years, has been found most satisfactory.

For patients allergic or intolerant to milk we use a mixture of gelatin, glucose, and orange juice.

ROUTINE TREATMENT FOR HEMORRHAGE

Remember that each patient must be treated as an individual and modifications of the suggested procedures may be necessary, especially in the presence of complications.

1] Order gastric hemorrhage diet. For first four days give 6 oz. of gelatin mixture every two hours. After fifth day begin to add soft-boiled or poached eggs, cereals, custards, Jello, ice cream; after seven or eight days order a bland ulcer diet. No water is added until after the fourth or fifth day and then in moderate quantity.

2] Treat shock by rest, warmth to extremities, and sedatives, if required.

3] Quiet apprehension. Reassure patient. Do not isolate.

4] Do not take a detailed admission history or make a complete physical examination but obtain enough information to determine complications or sources of bleeding other than ulcer.

5] Order blood coagulation tests: coagulation and bleeding time, prothrombin time, vitamin K determination, and platelet count. If coagulation is impaired, prescribe coagulants.

6] Type and match blood for transfusion. No transfusion should be given in first ten days except for evidence of severe anoxia. Then try one or two transfusions of 150 to 200 cc. of citrated blood. If not successful, prepare for continuous drip transfusion to be used until bleeding stops or at least for thirty-six hours (5 to 8 liters of blood may be required).

7] Chart blood pressure every two hours at first, blood urea nitrogen every two days at least.

8] Test all stools for occult blood until this disappears.

9] Start mineral oil, 0.5 oz., every night after second night. Give retention oil enema on fourth night and thereafter as required.

10] Make fractional gastric analysis on about the tenth or twelfth day in uncomplicated cases.

11] Start x-ray examinations on about the fourteenth day if bleeding has stopped.

12] No gastroscopic examination should be done until after x-ray study.

To Be Avoided

1] *Ice:* Externally, increases shock; internally, stimulates gastric circulation.

2] *Parenteral fluids:* Increase blood volume and pressure, cause more bleeding. N.B. Small transfusions may be required in severe anoxemia (see Routine).

3] *Stimulants* (digitalis, adrenalin, etc.): Tend to increase bleeding; use only in emergency.

4] *Alkalies:* Stimulate secretion; irritate bleeding area.

5] *Excitement or worry:* Increase shock and reaction; may increase bleeding.

6] *Examinations, manipulations, or treatments,* especially in first few days, unless absolutely necessary.

Hormones of the Digestive Tract

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Prepared for Modern Medicine

THE word "hormone" was coined by Bayliss as the result of his discovery of secretin in 1902. Since then many other gastrointestinal hormones have been described,[1] so that now the mucosa of the alimentary tract rivals the pituitary gland in the number of different hormonal substances produced.

Like other hormones secreted by glands derived from endoderm or ectoderm, chemically the gastrointestinal hormones are nitrogen-containing substances, in contrast with the products of mesodermally derived endocrine glands, which are steroidal.

GASTRIN

If a portion of the gastric mucosa containing acid-secretory glands is transplanted under the skin of a dog, secretion of acid will occur when food is eaten. Since the transplanted portion of the stomach has no nervous connections, this response must be initiated by some blood-borne substance.

There is good evidence to show that the blood-borne substance is not a constituent or digestion product of the food but is a hormone called gastrin, released by the gastric mucosa. The pyloric portion of the gastric mucosa is the principal site for the formation of gastrin, and distention of the stomach and action of certain chemical constituents of food (that is, meat extractives and peptones) are the principal stimuli for its release.

The chemical nature of gastrin is not known. The possibility exists that histamine is gastrin, but this will not be convincingly proved or disproved until a much more sensitive assay for plasma histamine is available. Strong evidence against the identity of histamine and gastrin is the demonstration in recent years by several different investigators that a gastric secretory stimulant devoid of histamine can be extracted from the pyloric mucous membrane.

Gastric surgeons emphasize that when pyloric mucosa is left in the pyloroduodenal stump after a gastric resection for duodenal ulcer, the incidence of postoperative ulcer is high. In a number of instances such a postoperative jejunal ulcer has been apparently cured by a second operation in which only pylorectomy was performed. This suggests that gastrin formation may be one of the important factors determining the outcome of gastric resection.

SECRETIN

When hydrochloric acid bathes the upper small intestinal mucosa, the

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hormone secretin is liberated into the blood stream. Secretin stimulates the secretion of pancreatic juice low in enzyme content and high in bicarbonate.

Secretin also stimulates the secretion of bile by the liver. Besides acid, fats and peptones also are capable of releasing secretin.

Secretin has been prepared in purer form than any of the other gastrointestinal hormones. The exact chemical nature of secretin is not yet known, but it is a relatively small molecule (the molecular weight is probably only a few hundred) and it contains only carbon, hydrogen, nitrogen, and perhaps oxygen.

The secretin test, that is, collection of duodenal juices following the intravenous administration of secretin, is a valuable aid in the diagnosis of pancreatic disease. Sometimes impairment of functions may be detected by the test when all other findings, such as fecal fat and nitrogen excretion, are normal.[2] Highly purified preparations capable of producing strong stimulation of pancreatic flow in doses as small as 5 mg. are available for performing this test in man.

PANCREOZYMIN

The concentration of the digestive enzymes (amylase, lipase, tryptases) in pancreatic juice varies with the stimulus. Thus hydrochloric acid in the duodenum causes the production of a juice of low-enzyme content, whereas peptone stimulates the production of a juice with high concentration of enzymes. Since these differences occur even when the nervous connections between the duodenum and pancreas are interrupted, the existence of a hormone capable of regulating enzyme secretion is suggested.

Several years ago Harper and Raper succeeded in extracting from intestinal mucosa a substance devoid of secretin which is capable of stimulating enzyme production without stimulating the rate of flow of pancreatic juice. This they called pancreozymin and suggested that it is the hormone regulating the enzyme concentration of pancreatic juice. Impulses from the vagus nerve to the pancreas are also known to stimulate enzyme output.

Pancreozymin has not yet been administered to human subjects.

CHOLECYSTOKININ

The principal mechanism for the control of gallbladder contraction is the hormone cholecystokinin, which is released from the upper intestinal mucosa in response to the presence of an adequate concentration of fat, acid, or peptone. In addition to gallbladder contraction, cholecystokinin also produces relaxation of the sphincter of Oddi.

A preparation of cholecystokinin suitable for human subjects would probably prove useful in the diagnosis of biliary tract disorders such as biliary dyskinesia. However, the available extracts are somewhat toxic and for this reason have been administered to human subjects only in a few experiments.

When preparations of secretin, pancreozymin, or cholecystokinin are incubated with blood serum the hormones are gradually inactivated.

DUOCRININ AND ENTEROCRININ

The duodenal glands of Brunner, which secrete abundant quantities of

an alkaline mucoid juice, are under hormonal control. Acid or foodstuffs in the duodenum cause the release of this hormone, for which we propose the name duocrinin. Only crude extracts of this hormone have been prepared so far, but it has been shown to be a substance distinct from secretin.

The protective character of the duodenal gland juice suggests that, when sufficiently purified, the hormone which stimulates this secretion may be worthy of therapeutic trial in duodenal ulcer.

The existence of a hormone, enterocrinin, for the control of the secretion of succus entericus by the glands of the small intestine has been postulated by Nasset. Confirmation of the experiments supporting its existence is needed.

ENTEROGASTRONE, UROGASTRONE, AND ANTHELONE

When fat or concentrated sugar solutions bathe the mucosa of the upper small intestine, gastric secretion and motility are inhibited. This effect is brought about by the release of a hormone, enterogastrone, from the intestinal mucosa.

Extracts of intestinal mucosa have been prepared which, when given intravenously in doses of about 25 mg., inhibit or abolish gastric secretion stimulated by histamine in dogs with gastric pouches. The extracts are relatively crude and much less potent intramuscularly than intravenously, so that in man several grams of material are necessary intramuscularly in order to produce a significant inhibition of the basal flow of gastric juice.

From the urine of man and animals a substance can be extracted which, like the enterogastrone concentrates, when injected intravenously in gastric pouch dogs, inhibits or abolishes gastric secretion. It has been suggested that this substance, urogastrone, may be an excretion product of enterogastrone. This idea has not been proved or disproved. On a weight basis, urogastrone preparations are at present more potent than enterogastrone in inhibiting gastric secretion.

Pyrogen is capable of inhibiting gastric secretion, and some crude enterogastrone and urogastrone preparations contain pyrogen. However, these extracts may be prepared completely free of pyrogen.

Both urogastrone and enterogastrone have therapeutic effects in dogs with the Mann-Williamson operation for the production of peptic ulcer. Two features of this therapeutic effect deserve emphasis. First, the doses of urinary or intestinal extract required to prevent the ulcers are so small that acid secretion is not significantly inhibited. Second, when treatment with these extracts is stopped after, let us say, one year of daily injections, the animals manifest a prolonged period of "immunity" to ulcer. By contrast, when protection against ulceration is accomplished by treatment with an antacid, ulcers occur shortly after cessation of the therapy.

These two facts indicate that urinary and intestinal extracts prevent ulcer by a mechanism other than inhibition of acid secretion. Sandweiss has proposed the term anthelone to designate the anti-ulcer properties of these extracts. Not until chemical separation has yielded one fraction which depresses gastric secretion and

another which protects against ulcer can we be sure that these two properties of the extracts are due to two different substances.

Intramuscular injections of enterogastrone concentrates have been rather extensively used in patients with peptic ulcer. The initial results were very encouraging in regard to reduction in the number and severity of recurrences. Our later results and those of others have not been so encouraging. We feel that this change is probably due to the use of relatively inactive extracts, because these later preparations also failed to protect Mann-Williamson dogs. The experimental and clinical evidence clearly indicates that urinary and intestinal extracts contain anti-ulcer substances. We are continuing our efforts to purify and improve the assay of these substances.[3]

At the present time, *oral* administration of intestinal and urinary extracts is being widely used in the treatment of peptic ulcer. This is an interesting clinical experiment, but it should be pointed out that there is no sound experimental basis for the oral use of these materials; that is, none by this route has yet proved effective in Mann-Williamson dogs.

REFERENCES

1. Grossman, M. I. "Gastrointestinal Hormones," *Physiol. Rev.*, in press.
Greengard, H. "Hormones of the Gastrointestinal Tract," in Pincus, G., and Thimann, K. V. *The Hormones*, Academic Press, 1948.
2. Dornberger, G. R., Comfort, M. W., Wollaeger, E. E., and Power, M. H. *Gastroenterology* 11:701-713, 1948.
Dreiling, D. A., and Hollander, F. *Gastroenterology* 11:714-729, 1948.
3. Ivy, A. C., Littman, A., and Grossman, M. I. *Gastroenterology* 12:735-747, 1949.

Obstructive Meckel's Diverticulum of Adults

JACK GREENFIELD, M.D., AND PHILIP L. SMOAK, M.D.*

ACUTE bowel obstruction in a young adult with no hernia, surgical adhesions, or other obvious cause may be due to invaginated Meckel's diverticulum.

In spite of an unproved diagnosis or relief by decompression, operation should be done within twelve hours. The death rate is tripled by delay of three days, warn Jack Greenfield, M.D., of the University of Tennessee, Memphis, and Philip L. Smoak, M.D., of Tampa, Fla.

Meckel's diverticulum was noted at the apex of intussusception in 2 youths who recovered after prompt removal of the involved segment.

After childhood, obstructive diverticulum is often mistaken for appendical abscess. A mass may be felt in the right lower quadrant, externally or by rectum. Nausea, vomiting, fever, and leukocytosis are common. However, in contrast to appendicitis symptoms, the acute attack is often preceded by occasional blood in the stools, and pain is more colicky. Loops of small bowel are distended.

* Intussusception due to invaginated Meckel's diverticulum in adults. South. Surgeon 15:505-511, 1949.

Cancer of the Stomach

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Prepared for Modern Medicine

WHEN a diagnosis of cancer of the stomach is easily made, the disease is probably incurable.

Gastric cancer is not detectable by currently used methods of examination at a stage when the only reasonably hopeful treatment now applicable, surgical excision, may be successful. The rare exception is a fortuitous, not an intentional event.

Epigastric pain, difficult swallowing, vomiting, anorexia, and weakness are subjective evidences of well-formed gastric cancer. Achlorhydria, anemia, weight loss, and occult blood in the stools are systemic manifestations of established malignant disease. A mass seen and felt in the abdomen and a discernible defect in the roentgenographic image of the barium-filled stomach are not only clearly diagnostic, but prophetic of death by cancer, even if the growth may be removed. A large liver, prominent supraclavicular lymph nodes, and a shelf in the pelvis demonstrable by digital rectal palpation are results of metastatic spread of cancer and indicate inoperability.

About one-half of the cancers discovered in stomachs of patients who seek medical advice within three months of the beginning of gastric symptoms are inoperable.

Circumstances presumptive of the existence of cancer of the stomach are: occurrence and persistence of dyspepsia not previously experienced; inexplicable loss of appetite; unexpected hematemesis or melena; and constipation after habitual bowel regularity.

Physical conditions that favor growth of cancer in the stomach are: atrophy of gastric mucosa, achlorhydria or pernicious anemia, and gastritis with epithelial alterations, especially when associated with high incidence of familial cancer.

When these circumstances or conditions prevail in an individual older than forty-five years—certainly when older than fifty—all resources of microscopy, chemistry, radiology, and gastroscopy should be assembled to assure a positive diagnosis of cancer or no cancer. Biopsy may be made under gastroscopic direction, and cytology of the gastric contents may be studied. Pathogenesis of carcinoma is directly related to a state of disorganized hyperplasia of the gastric mucous cells.

A carcinoma of the stomach may ulcerate, but a benign gastric ulcer does not become cancerous. An ulcer considered to be benign and later found to be malignant was always cancerous. Juxtapyloric ulcers may be

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assumed to be malignant. A benign polyp of the stomach is usually an adenoma, occasionally a fibroadenoma, and does not become malignant. A polyp which is considered to be benign, and later is proved to be malignant, was always malignant—an adenocarcinoma.

Malignant disease in the body, initiated as carcinoma of the stomach, may pursue an acute or a chronic course. Operability or resectability of a gastric growth does not imply curability.

Patients known to have atrophic gastritis, achlorhydria, pernicious anemia, or gastric polyps should be examined frequently, and always when unusual symptoms or changes in physical status appear.

Lipoma of the Colon

GABE C. LONG, M.D., MALCOLM B. DOCKERTY, M.D., AND JOHN M. WAUGH, M.D.*

BENIGN fatty tumor of the colon is rare but should be considered in differential diagnosis. Major symptoms result from obstruction by the growth or by intussusception.

Gabe C. Long, M.D., of Santa Clara County Hospital, San Jose, Calif., Malcolm B. Dockerty, M.D., and John M. Waugh, M.D., reviewed 33 cases encountered at the Mayo Clinic, Rochester, Minn., from 1896 to 1945. Lesions occurred chiefly in patients of cancer age, sometimes with carcinomas. Principal sites were the cecum, sigmoid flexure, and hepatic flexure.

In the early stage, vague abdominal complaints arise from disordered peristalsis and ulceration with or without hemorrhage. Constipation generally ensues and occasionally diarrhea, melena, or both. A mass may be palpable.

Roentgenograms usually show a round, encapsulated, multiloculated submucous growth. Fat, the most radiolucent of all tissues, may be distinguished in double contrast films.

Obstruction may be progressive or intermittent, partial or complete. During severe acute attacks, sudden sharp cramp-like pain occurs with nausea, vomiting, and distention. Symptoms are aggravated by food and relieved by a bowel movement.

For acute obstruction, decompression and other supportive measures are employed. Sulfasuxidine should be given and irrigations used before every exploratory operation. The tumor may be removed by local enucleation or segmental resection with end-to-end anastomosis. A pedunculated lipoma of the rectum is excised through the proctoscope.

* Lipoma of the colon. S. Clin. North America 29:1235-1243, 1949.

Deficiency Diseases of the Gastrointestinal Tract

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THE gastrointestinal tract is related to nutrition in two ways. First, the tract serves as the portal of entry for the vitamins and other essential food elements. Second, the function of the tract is impaired unless adequate amounts of the essential nutrients are provided, efficiently absorbed, and utilized.

It may be very difficult to determine whether alteration of gastrointestinal function is primary or secondary to vitamin or protein deficiency. Although vitamin deficiency exists most commonly when the diet is inadequate, avitaminosis is also frequently the result of gastrointestinal disorders, particularly those associated with diarrhea, vomiting, anorexia, dysphagia, acute dyspepsia, pain, or shortcircuiting of the intestinal flow by operation or spontaneously developing fistulas.[1] Degenerative, inflammatory, and atrophic changes in the intestinal mucosa may contribute to poor absorption of foodstuffs.

Initial signs of vitamin deficiency are usually vague, slight, easily misinterpreted, or unrecognized. No specific or distinctive symptoms or signs appear in the early stages of deficiency when treatment is most satisfactory.[2] Prompt diagnosis depends upon experience, eternal watchfulness, and occasionally upon technical and laboratory procedures. All methods of study have emphasized the predominance of multiple over single deficiencies. Many physiologic states and certain defects in vitamin, protein, or mineral absorption and utilization may produce deficiency disease despite food intake ordinarily considered adequate.

Particularly in the beginning, gastrointestinal symptoms due to deficiency are apt to be indistinctive and are often attributed to simple digestive disturbances, such as stomatitis, glossitis, and anorexia.

DIAGNOSIS

Detection of incipient deficiency changes depends upon a high index of suspicion supplemented by a careful dietary and medical inventory, inspection of the mouth, gastric analysis, roentgenograms, particularly of the small intestine, selected chemical and therapeutic tests to determine the available level and utilization of vitamins, and evidence of vitamin or other deficiency disease elsewhere in the body. The striking manifestations, such as atrophy of the tongue, achlorhydria, lack of specific ferments, diar-

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rhea, loss of tone of the gastrointestinal tract, or ulceration of the intestine, may indicate the diagnosis.

There is little evidence that deficiency of vitamins A, D, and E is responsible for gastrointestinal tract derangement, but it is important to remember that in diseases which interfere with the digestion of fat, like sprue, steatorrhea, and pancreatic and hepatic disease, the absorption of the fat-soluble *vitamins A, D, K, and E* may be insufficient.

Vitamin B complex deficiency, particularly of the thiamin chloride, niacin, and riboflavin elements, frequently produces anorexia, glossitis, diarrhea, proctitis, constipation, and abdominal distress. Roentgenograms of the small bowel made at intervals after a barium meal may show puddling of the barium in smooth, sausage-shaped masses, which is interpreted as nonspecific disorder of motor function and perhaps associated edema of the mucosa.

Early manifestations of thiamin insufficiency may include anorexia, capricious appetite, indigestion, gassy distention, eructation, nausea, vomiting, constipation, or diarrhea. In advanced stages, atrophy and inflammation of the bowel may occur. Amelioration of these symptoms by oral or parenteral thiamin in daily doses of 10 to 30 mg. is a good therapeutic diagnostic test.

Niacin deficiency may induce the characteristic abdominal symptoms of pellagra. These are similar to indications of thiamin deficiency but include, in addition, glossitis, which is particularly noticeable on the anterior third of the tongue as small aphthous ulcers that often progress until the tongue is brick or scarlet red and edematous. Esophagitis and achlorhydria are observed in about 50% of cases. Advanced stages of the disease are characterized by inflammation of the entire gastrointestinal tract which, in chronic cases, may subside to leave the membrane rough and thick or thin and atrophic. The colon walls in such states are apt to be thick, with patches of pseudomembrane of a stippled appearance. Diarrhea is common and may be of slight degree or severe enough to provoke fifteen to twenty bowel movements per day.

Riboflavin deficiency may cause cheilosis at the angles of the mouth where the moist, crusted, transverse fissures may become secondarily infected. The tongue is often purple or magenta colored but remains clean, without the true atrophy that appears in niacin deficiency; the papillae are mushroom shaped. Achlorhydria is fairly common and dysphagia and gastric discomfort have been observed.

The diagnosis of vitamin B complex deficiency is often made only after the administration of a test dose of 10 to 30 mg. of thiamin chloride, 2 mg. of riboflavin, and 100 mg. of niacin three times daily for two to three weeks. Chemical tests have not been considered satisfactory indicators of deficiency by most clinicians.[2]

Choline, as choline chloride or dihydrogen citrate salt, in daily doses of 2.5 gm. by mouth, and inositol, a lipotropic fraction of B complex, are often given with methionine and may protect an individual with incipient cirrhosis due to dietary deficiency from fatty infiltration of the liver cells. Egg yolk, heart, green vegetables,

and beans appear to be adequate sources of choline. The high-protein diet usually prescribed for liver disease contains sufficient methionine and choline to accomplish prophylactic and therapeutic purposes in cases of cirrhosis. Until the protein intake is unquestionably adequate, these substances must be furnished in addition to the diet, in which milk, eggs, meat, cottage cheese, and other high-protein foods predominate. Inositol apparently increases gastrointestinal peristalsis, opposing the action of niacin, and may also be a structural unit in the molecule of pancreatic amylase.

Bleeding into the gastrointestinal tract from gums or other sites may be the only expression of *vitamin C* deficiency. Subperitoneal hemorrhages in scurvy sometimes simulate acute abdominal conditions and operations performed on such individuals are hazardous. The importance of vitamin C in formation of peptic ulcer is uncertain, but commonly prescribed ulcer diets usually provide meager supply of this substance. Plasma vitamin C levels may be diagnostically useful in doubtful cases, although Cranston and Lund have observed that symptoms and plasma levels are often unrelated.

Deficiency of *vitamin K* predisposes to hypoprothrombinemia and hemorrhage. Bile is required for the absorption of naturally occurring vitamin K, and intact liver is necessary for the production of prothrombin. The lack of bacterial synthesis of vitamin K in the intestine may be a factor in the genesis of hemorrhagic disease of the newborn. In the adult, nutritional deficiency affecting vitamin K may be due to sprue, regional ileitis, ulcerative colitis, or neoplasm. Salicylates depress plasma prothrombin activity; bacteriostatic drugs, like sulfaguanidine and succinylsulfathiazole, may suppress bacterial activity in the intestine and thereby reduce vitamin K synthesis and precipitate hypoprothrombinemia.

Attention has recently been directed to *vitamin U*. The substance appears to prevent development of histamine-induced ulcers in animals but has been used only experimentally for treatment of human peptic ulcer.[3]

Impaired gastrointestinal function, as in typhoid or ulcerative colitis, often leads to *protein* deficiency, and negative *nitrogen* balance of considerable degree almost always follows severe injuries or disease. Conversely, protein deficiency from any cause may seriously disturb gastrointestinal function by inducing edema of the gastric or intestinal mucosa. The emptying time of the stomach is often delayed in proportion to the extent of protein deficiency, and movement and absorption of the food in the small intestine may be abnormal. Poor postoperative function of a gastroenteric anastomosis may be due to edema of the stoma consequent upon hypoproteinemia. Wound healing proceeds slowly in the patient with hypoproteinemia. Thus in the sick, postoperative, or growing individual a positive nitrogen balance is mandatory.

The importance of electrolytes, notably *sodium* and *potassium*, in dysfunction of the digestive tract is familiarly demonstrated by the loss of weight and strength and particularly by the anorexia, recurrent indigestion, nausea, vomiting, constipation, and

abdominal pain that may accompany early Addison's disease.

TREATMENT

The patient with nutritional deficiency should receive therapeutic quantities, that is, five to ten times the recommended daily allowances of the lacking nutrients, in addition to protective amounts, or more than recommended, of all other necessary food substances.

Treatment of deficiency disease when the functions of the gastrointestinal tract are disturbed frequently requires the use of parenteral preparations of the deficient substances. This is true particularly when specific elements are lost by vomiting, diarrhea, or internal or external fistulas or when ingested materials are not utilized because of the absence of essential secretions such as pancreatic juice or bile. In the pre- and postoperative management of patients, oral participation of necessary foodstuffs may be interrupted at the very time when the need for these substances is the greatest. Under conditions such as these, vitamins, electrolytes, and proteins must be furnished parenterally until a more satisfactory assimilation of natural nutriment is possible by mouth.

Vitamin A deficiency may be corrected by daily doses of 25,000 to 50,000 U.S.P. units for two weeks. In chronic vitamin A deficiency, 100,000 to 150,000 units are frequently necessary for longer periods of time, followed by 20,000 to 25,000 units until evidences of deficiency have disappeared.

B complex avitaminosis involving thiamin, niacin, and riboflavin may be abolished by administration of a balanced diet of 3,500 to 4,500 calories, supplemented by 10 to 20 gm. of brewers' yeast, 10 to 50 mg. of thiamin, 200 mg. of niacin, and 5 mg. of riboflavin daily. Vitamin supplements and concentrates may be taken orally as soon as this is possible. During the period when parenteral administration is necessary, vitamin preparations should be given intramuscularly or, if intravenous injections must be done, the doses should be divided throughout the day or should be slowly infused to prevent excessive waste of materials by rapid excretion in the urine. Water-soluble vitamins should be also given orally in small divided doses for maximum effect.

Treatment of scurvy comprises a high-vitamin diet with the addition of 500 to 2,000 gm. of synthetic ascorbic acid orally or intravenously daily for three to four days.

Therapeutic control of vitamin D deficiency may, as a rule, be effected by 1,000 to 1,500 U.S.P. units of the vitamin per day.

Deficiency of vitamin K may be treated by the daily oral use of 1 to 2 mg. of a water-soluble preparation or, better still, by 2 to 5 mg. parenterally. Failure to raise the prothrombin time to normal when vitamin K intake is adequate indicates abnormal absorption or impaired hepatocellular function.

Protein deficiency is most effectively repaired by oral replacement or, failing this, by parenteral administration. The needs of depleted tissues for protein are considerably greater than maintenance requirements, and effective amounts of protein in such condi-

tions are from two to three times the recommended dietary allowance. The minimal therapeutic dose for an adult, to be attained as early as possible in the course of any disease or condition associated with increased protein catabolism, may be assumed to be 125 gm. of protein daily.[4] Unless muscle tissue is so considered, the body has little or no protein reserve and under pathologic conditions the loss of protein may be large, up to several hundred grams a day. High-protein and high caloric diets improve the patient's well-being and hasten the anabolic phase of protein metabolism.[5]

Protein requirements must be met with a complete product. A number of amino acids, including lysine, tryptophane, phenylalanine, leucine, isoleucine, threonine, methionine, valine, and possibly histidine, are essential for man. Without any one of these, all the others become useless for the purpose of tissue synthesis.[6]

Several protein concentrates such as egg white, powdered whole egg, casein, and hydrolyzed proteins are available in addition to the hemoglobin and plasma protein which may be provided by transfusion. The hydrolyzed protein administered should be complete (acid casein hydrolysates, for instance, lack tryptophane) and at least 50% should consist of single amino acids.[4] Protein requirements can be met and balance obtained by intravenous feeding of such substances, but the enteral administration of protein hydrolysates, by mouth, stomach tube, or jejunostomy, is preferred whenever possible.

REFERENCES

1. Wilbur, Dwight L. *Am. J. Digest. Dis.* 6:610-617, 1939.
2. Wilbur, Dwight L., and Armstrong, Charles D. *Vet. Admin. Tech Bull.* 10-51, Apr. 15, 1949.
3. Cheney, Garnett. *California Med.* 70:10-14, 1949.
4. Goodhart, Robert S. *Bull. New York Acad. Med.* 25:185-193, 1949.
5. Cuthbertson, David P. *Am. J. Med.* 5:879-890, 1948.
6. Cannon, P. R., Steffee, C. H., Frazier, R. J., Rowley, D. A., Stepto, R. C. *Federation Proc.* 6:390, 1947.

Colitis and Enteritis

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Prepared for Modern Medicine

THE term "colitis," through usage, has come to mean any inflammation of the large intestine. "Enteritis" has by the same process come to indicate inflammatory disease of the small intestine.

The problem of ulcerative colitis or regional enteritis is always difficult, and unfortunately, may continue to challenge the ingenuity of the physician and the fortitude of the patient.

COLITIS

There are a great many varieties of colitis. For some of them, such as tuberculous colitis, amebic colitis, or streptococcic ulcerative colitis, a definite etiologic agent has been established. Ulcerative colitis occurs as a late phase of bacillary dysentery and as the result of infection by the virus of venereal lymphogranuloma.

In addition to these infections, however, there are a vast number of cases of ulcerative colitis for which the etiology is not clear. Some of these idiopathic conditions may be of infectious nature, although the invading organism has not been isolated; others may be caused by disturbed metabolism, possibly abnormal adrenal function.

Classified as "idiopathic ulcerative colitis" are a rather large number of cases in which the entire large intestine is involved, though distribution of the involvement may be patchy. In a substantial number of cases, involvement of the large intestine is segmental, and portions above the sigmoid, or at least above the point that can be visualized with the sigmoidoscope, are implicated. Also, such conditions as intestinal allergy may present features to which the name allergic colitis could be applied.

The all too common "irritable colon syndrome" frequently may be confused with real inflammatory disease, one of the results of which is the misuse of the term mucous colitis.

This discussion will be concerned largely with the streptococcic form of ulcerative colitis and the ulcerative colitis of unknown origin which simulates the streptococcic type in many clinical aspects. Regional enteritis also will be considered.

The streptococcic type of ulcerative colitis is an intestinal disease, the lesions of which begin just above the anal canal and tend to spread relentlessly orad. In the involved portion of the bowel, the mucous membrane is granular, edematous, and bleeds easily; the wall of the bowel is thickened, the lumen narrowed.

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Because the process begins in the lower part of the rectum, obvious bleeding from the anus is an early and a pathognomonic sign. Hemorrhage with most other forms of ulcerative colitis, and particularly from ulcerative colitis of unknown origin, is often not apparent, because the lesions are irregular and of patchy distribution throughout the colon, and ulceration often simulates ulcers of amebic or tuberculous colitis or even of bacillary dysentery.

In general, the course of either streptococcic ulcerative colitis or colitis of unknown origin can be classified readily as [1] insidious in onset, [2] severe in onset, or [3] fulminating. Although there are fewer cases of colitis of unknown origin than of the streptococcic form, in a relatively greater number of the colitis cases of unknown origin the disease is fulminating.

Treatment—The therapy depends largely on the severity of the symptoms and the form of the disease.

The best treatment for mild forms of the disease probably includes a carefully planned program of rest and relaxation, a high-protein high-calorie, high-vitamin, and low-residue diet, and administration of the anticolitis vaccine. The latter is prepared from the streptococcus so commonly found in these cases. In selected cases one of the nonabsorbable sulfonamide drugs, such as sulfathaladine or sulfathalamyd, is efficacious; sulfonamide suppositories may be helpful.

Similar therapy is employed when the disease is severer, but in such instances the sulfonamides are more important. For complications such as arthritis, pyoderma gangraenosum, uveitis, and the like, salazopyrin has proved particularly helpful.

Fulminating ulcerative colitis always has been a difficult problem but, as we have repeatedly pointed out in the past and as has recently been shown by Brown and Perry,[1] the disease can be controlled under a medical program which includes large amounts of antibiotics, transfused blood, oxygen by inhalation, fluids administered intravenously, extra vitamins, amino acid solutions, sulfonamides, and other supportive measures. All or combinations of any of these measures have proved helpful. Often food and drink by mouth must be withheld for days. Treatment should be individualized.

Surgery, by and large, should be reserved for patients with ulcerative colitis who have complications such as rectal stricture, extensive secondary polyposis, perirectal abscess with formation of fistula, or colonic perforation, or for the occasional patient with a malignant neoplasm.

If operation is done, the procedure of choice is ileostomy subsequently followed by colectomy. With the new skin-grafted ileal stoma, a patient gets along very comfortably. The practical application of the skin-grafted ileal stoma by Dragstedt and others[2] and Black and Thomas[3] constitutes the greatest, if not the only appreciable advance in surgery for ulcerative colitis in the last quarter of a century.

Recently vagotomy has been suggested by Dennis and Eddy,[4] but thus far this procedure has not been looked upon with favor, except when done for a very few patients with relatively mild disease.

Various other measures have been suggested, based on new developments. The patient who has ulcerative colitis secretes an unusual amount of lysozyme into the intestinal canal. Whether this is simply a substance which is present because of the inflammation, just as the production of mucus is increased with inflammation, or whether the enzyme is of etiologic significance has not yet been made clear.

Psychotherapy and psychoanalysis have found a place in the management of a few patients with ulcerative colitis. Some advocates have praised these forms of therapy highly, but unfortunately the methods are applicable to a very small number of patients.

REGIONAL ENTERITIS

There are two pathologic types of regional enteritis, a clinical entity which is of great importance to surgeon and internist. In one, a rather localized segment of the bowel is involved, consisting of a single granulomatous hyperplastic lesion. In the second type, the ulcerative process is more extensive and predominates, but a hyperplasia such as occurs in the first group may supervene, and several long or short segments of the bowel may be involved.

Clinically, four stages of the disease may be recognized as follows: [1] with abdominal irritation, [2] with inflammation, [3] with chronic obstruction, and [4] with fistulas. Regional enteritis is a progressive disease, and the diagnosis depends on the physical findings and roentgenologic evidence of segmental involvement of the intestines, not including the distal part of the large intestine.

Treatment—Until recently, the treatment of regional enteritis was primarily surgical, but because of the high rate of recurrence other measures have been sought.

There is still controversy as to the relative value of entero-anastomosis with removal of the diseased segment of bowel as compared to entero-anastomosis achieved by exclusion of the diseased segment of bowel without removal. Most surgeons advocate the former. With either operation, the recurrence rate is high. In 103 cases, Melton[5] found a recurrence in 24.74%. The recurrence rate after surgical treatment may be less in the localized form of the disease, but even then may be too high.

Consequently, a medical program

REFERENCES

1. Brown, C. H., and Perry, J. H., III. *Cleveland Clin. Quart.* 16:126-131, 1949.
2. Dragstedt, L. R., Dack, G. M., and Kirsner, J. B. *Ann. Surg.* 114:653-661, 1941.
3. Black, B. M., and Thomas, J. F. *Proc. Staff Meet., Mayo Clin.* 22:508-512, 1947.
4. Dennis, Clarence, and Eddy, F. D. *Proc. Soc. Exper. Biol. & Med.* 65:306-307, 1947.
5. Melton, T. J. A Study of Regional Enteritis with Special Regard to Post-operative Recurrence and Extent of Resection. Thesis, Graduate School, University of Minnesota, 1945.
6. Popp, W. C., Dixon, C. F., and Bargen, J. Arnold. Unpublished data.

including a long period of rest, administration of sulfonamides such as sulfathaladine, and use of other supportive measures has been employed with some degree of success. Recently, roentgenotherapy has been advocated and has obtained considerable success. Popp, Dixon, and I[e] treated 50 patients roentgenologically. Striking improvement was achieved in some patients, symptomatic arrest in others, and obviously no result in some with far advanced and extensive type of disease.

Massive Gastrointestinal Hemorrhage Not Due to Peptic Ulcer

J. William Hinton, M.D., and Donald A. Davis, M.D.*

Of massive hemorrhages from the gastrointestinal tract, 6 out of 10 are caused by peptic ulcer. In the other 4 cases, bleeding is from sources that may usually be controlled by conservative measures with adequate compensation for blood loss.

Gastrointestinal hemorrhage is defined by J. William Hinton, M.D., and Donald A. Davis, M.D., of New York University, New York City, as massive when associated with signs of shock: systolic blood pressure below 100, rapid pulse, perspiration, red blood cell count of two and one-half million or less, and hemoglobin of 50% or under.

After the age of forty-five, esophageal varices and cancer of the stomach are the most common causes of massive hemorrhage from the upper intestinal tract. Other sources of bleeding may be hiatus hernia, gastritis, redundant gastric mucosa prolapsed through the pylorus, or benign tumors of the stomach or duodenum. Cancers of the esophagus, duodenum, jejunum, and ileum are rare. A duodenal carcinoma may erode into the pancreas and cause severe bleeding.

Meckel's diverticulum may be responsible for melena, particularly in children; other diverticula of the small bowel infrequently cause hemorrhage in adults. Bleeding from the colon is seldom as great as from the duodenum, stomach, or esophagus, but diverticulitis of the large intestine may be the origin of severe blood loss.

Segmental or ulcerative colitis is likely to evoke anemia slowly from continuous or repeating oozing from eroded mucosa. Cancer of the lower colon may cause sudden hemorrhage; benign tumors do not usually bleed extensively.

Except in an unusual instance of cancer of the stomach, immediate surgical intervention need not be considered for gastroenterologic hemorrhage apart from bleeding peptic ulcer.

* The management of massive hemorrhage from the gastrointestinal tract not due to peptic ulcer. S. Clin. North America 29:317-321, 1949.

Indications for Surgery in Chronic Ulcerative Colitis

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EXPERIENCE in the management of chronic ulcerative colitis has led to a new concept of the place of surgery in the treatment of this disease.

The history of ulcerative colitis is one of repeated remissions and exacerbations, and the longer patients are kept under observation, the more likely that complications will arise which cannot be handled satisfactorily by medical measures. The treatment of a large number of patients in many clinics, both medical and surgical, enables us to evaluate what can be accomplished by surgery. It may now be clearly stated that surgery can completely and permanently cure the disease.

Through a long period of trial and error, a number of operative procedures, such as appendicostomy, cecostomy, and colostomy have proved to be ineffectual. Definitive surgical treatment now includes only ileostomy and subtotal or total colectomy.

Ileostomy and colectomy can be done even for poor risk patients with reasonable safety. Morbidity and mortality have been markedly reduced because of improved management of cases by the internist and gastroenterologist and because of the cooperative efforts of the surgeon, which permit an operation to be done at the proper time.

Probably the greatest impetus to the acceptance of surgery, and properly so, has been the perfected care of an ileostomy. Physical and mental rehabilitation after the operation is now possible. With a properly fitted bag the patient may pursue the same activity he did before onset of the disease.

Too often in the past surgery was accepted only as a last resort. Surgical consultation was frequently delayed until patients were approaching a moribund state. When the clinical course of the disease, even in the chronic state, is demonstrated to be progressively downhill, there should be no delay in the acceptance of operation. It should be clearly understood that all patients with chronic ulcerative colitis should have the benefit of medical treatment and that surgery is advised only for patients with complications that cannot be properly handled by medical means.

Surgical treatment accomplishes certain things that cannot be reproduced by medical treatment. First,

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ileostomy can put the colon at complete rest by diversion of the fecal stream, and second, colectomy can remove the diseased bowel, completely eliminating the inflammatory process and attendant general systemic consequences, such as anemia, malnutrition, vitamin deficiency and infectious arthritis.

The theory is frequently advanced that surgical treatment should be delayed, particularly colectomy, in the hope that some new treatment or discovery will be made which will relieve the disease. This idea is fundamentally erroneous since in advanced stages of the disease structural changes of the colon are irreversible, so that even with possible healing of the inflammation, satisfactory function would still be impossible.

Favorable reports continue to appear of new methods of treatment, offering hope of relief. Certainly all possible technics should be carefully tried and the clinical results evaluated, but their very multiplicity is an indication that no satisfactory means have been found for eradication of the disease.

There should be little conflict concerning the value of medical or surgical treatment of chronic ulcerative colitis. As this problem is discussed at such meetings as the American Gastroenterological Association, with all aspects of treatment carefully considered, only minor disagreements are evident. The main difference of opinion is in the management of the acute fulminating stage, for which the results are bad in an appreciable number of cases with any form of treatment. Other questions that have not been properly settled are the time for surgical treatment and the particular conditions under which operation is imperative.

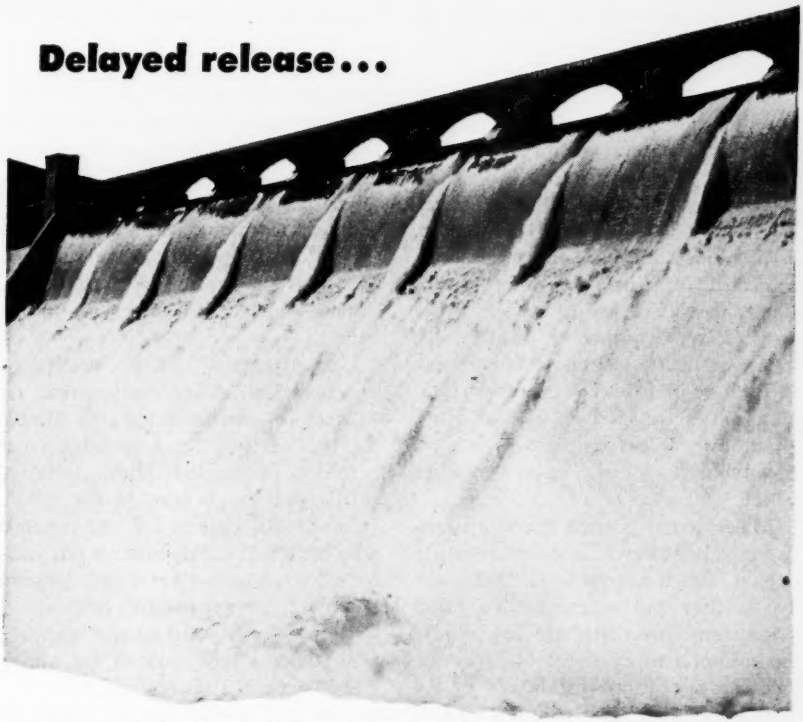
The indications for surgery can be stated as follows: [1] intractability to medical management, [2] perforation, [3] hemorrhage, [4] malignant degeneration, [5] obstruction, [6] anal incontinence, [7] infectious arthritis, and [8] acute fulminating colitis.

Intractability—In spite of adequate and continued medical care, an appreciable number of patients do not respond satisfactorily to treatment. This may be evidenced by persistently poor nutrition, chronic anemia, or frequent exacerbation or recurrence of symptoms.

When a patient is no longer able to continue productive work or is incapacitated for periods of three months or more each year, surgical treatment must be considered and frequently accepted. When bowel movements and rectal discharges are uncontrollable, with consequent fluid loss and electrolytic imbalance, operation is clearly indicated. The degree of comfort provided, even with an ileostomy and frequent discharges into the bag, is such that patients who have experienced long periods of abdominal and anal discomfort are amazed and pleased.

Perforation—Acute perforation of the ileum or colon usually occurs in acute exacerbations of the disease, occasionally with the first attack, and frequently results fatally in spite of the use of antibiotics and other beneficial measures. Drainage of the general peritoneal cavity by colpotomy or proctotomy may save some of these patients. Ileostomy should be delay-

Delayed release...



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  For simultaneous immunization against diphtheria and tetanus
- **Dip-Pert-Tet Alhydrox****
  Cutter diphtheria, pertussis, tetanus combined vaccine for simultaneous immunization against diphtheria, pertussis, tetanus

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ed for at least a few days during which supportive measures are employed.

Subacute or chronic perforation and the late results of these conditions usually demand surgical intervention. Slow perforations may be evidenced by localized abscess within the abdomen, pelvis, or perineum; as fistulous communications between loops of intestine through the abdominal wall or groin; by sigmoidal vesicles; rectovaginal or perineal fistulas; or fistulas in ano. When these secondary manifestations of perforation are established, no means other than surgical extirpation of the diseased bowel segment offer chance of relief.

Many patients with chronic ulcerative colitis have anorectal complications which cannot be treated locally, as they can when due to other conditions. Anorectal surgery should be confined to drainage of abscesses, because operations for fistula or for fistula in ano will produce granulating wounds that will not heal and are likely to result in anal incontinence.

Hemorrhage—Massive blood loss with chronic ulcerative colitis seldom indicates operation. When the condition is encountered, every attempt should be made to arrest the hemorrhage by blood replacement and medical measures or by ileostomy, since subtotal colectomy during these episodes has a high operative mortality.

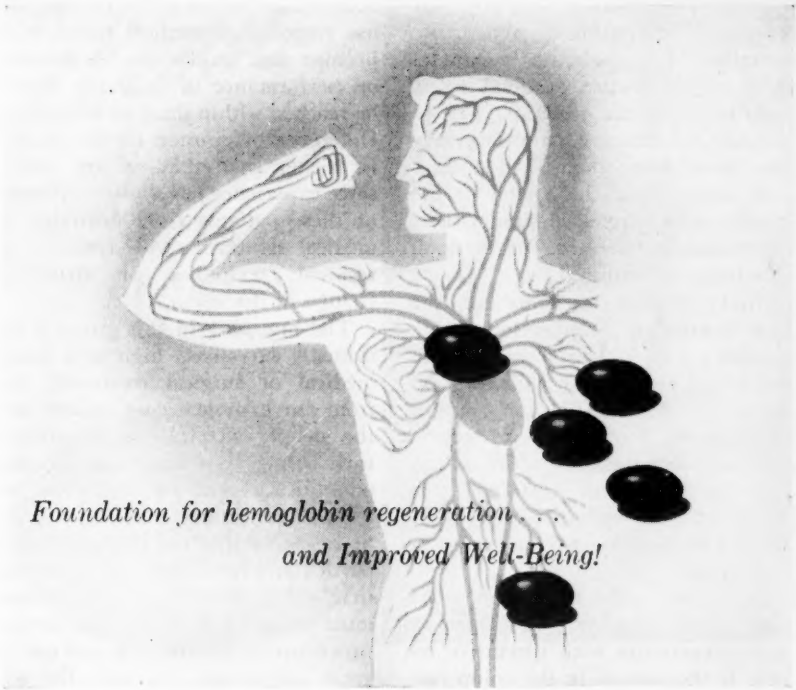
Nevertheless, colectomy is necessary for some patients. Chronic blood loss from repeated rectal discharges causes a severe chronic anemia that is difficult to control by the use of iron preparations, vitamins, liver extract, and blood replacement and may be an indication for operation.

Malignant degeneration—True polypoid change in the colon with ulcerative colitis is rarely observed, but a pseudopolypoid condition of the bowel is very common. Whether the latter is prone to malignant degeneration is not certain, but patients with ulcerative colitis for many years have had carcinoma develop as a result of the disease or concomitant with it.

Unfortunately, when malignant degeneration occurs, early spread resulting in carcinomatosis is almost the rule. It has been estimated that 5 to 8% of patients with ulcerative colitis develop cancer of the colon. In our own experience, in patients who have had the disease for ten years or more and who have had surgery, the incidence approaches 30%.

If one waits until cancer appears, few patients will survive for appreciable periods after resection. For this reason the possibility of malignant degeneration must be considered when the disease has existed for a long period of time. Patients with polypoid degeneration must have repeated sigmoidoscopic and roentgenographic examinations. A patient who has had chronic ulcerative colitis and has unexplained bleeding, without exacerbation of infection, must be considered to have cancer.

Obstruction—In the cicatricial stage of chronic ulcerative colitis, localized areas of obstruction may occur in any portion of the lower ileum or colon. The bowel contracts and closes, owing to thickening of the mucosa and muscular layers, usually late in the course of the disease, and occa-



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**The need for pyridoxine hydrochloride, calcium pantothenate and folic acid in human nutrition has not been established.

†The minimum daily requirement for niacinamide has not been established.

sionally when active infection has completely disappeared. When obstruction occurs in the segmental form of the disease, subtotal colectomy or segmental resection may be possible. Obstructive symptoms may also result from the so-called lead-pipe colon when the lumen of the bowel is greatly reduced. Under these circumstances, ileostomy and total colectomy are required.

Anal incontinence—One of the most distressing complications of ulcerative colitis is the inability to control bowel movements, with constant soiling of clothes. This may follow local anorectal operative procedures or occur spontaneously as the disease progresses. Ileostomy is preferable to this state, and operation should be advised as soon as anal incontinence is obvious.

Infectious arthritis—Swelling and pain of one or more joints are common occurrences with ulcerative colitis. If the process in the colon cannot be controlled, joint changes may be progressive. If the diseased bowel is not removed, the arthritic condition may eventually produce severe crippling and incapacitation.

Pain in the joints of the wrist, fingers, knees, or back may be quite severe even though roentgenograms show only soft tissue swelling and no change in the cartilaginous or bony structure. The removal of the diseased bowel at this stage results in early recovery from the infectious arthritis. If relief is to be procured, surgery must be done before structural changes occur in the joints.

Acute fulminating colitis—Operation is advisable during the first attack of ulcerative colitis or in an acute exacerbation of the disease, unless response to medical measures is prompt and satisfactory. A decision on performance of ileostomy should be reached within three to seven days. Difference of opinion on this matter is greater than that on any other, since experience has shown that some of these patients react favorably to medical treatment with little or no residual symptoms or structural change in the colon.

The mortality in this group is admittedly excessively high with either medical or surgical treatment, but from our experience we believe that the death rate will be lowered if early ileostomy is performed. In some patients salvaged by operation, intestinal continuity may be restored by disconnecting the ileostomy. It is particularly for this group of patients that delay in accepting operation must be avoided. While the surgical procedure of ileostomy is not one of great magnitude, the mortality will be higher in patients with acute fulminating colitis than in any other group if the operation is performed too late.

At present, requirements for surgery in ulcerative colitis are better understood, since experience has been that at least half the patients with this disease who were treated medically have had unsatisfactory results. The longer patients with ulcerative colitis are observed, the greater will be the number of complications which will demand surgery. Cooperative medical and surgical management is essential to attain the best results in these cases.

If the proper surgical procedures are applied at the proper time in

the course of the disease, a reasonable operative mortality and satisfactory results may be expected. With a properly selected bag, ileostomy may be handled by the patient with little inconvenience. These patients should be observed with genuine interest throughout their lives, and the surgeon should accept the responsibility for every care that is necessary. Useful and happy lives are possible with ileostomies and colectomies.

Tropical Disease in War Veterans

THOMAS T. MACKIE, M.D., AND BESSIE SONNENBERG*

MANY exservicemen are chronic invalids because physicians and laboratory workers do not recognize parasitic infestation. Symptoms are usually considered psychoneurotic.

Intestinal protozoa and helminths were harbored by 64% of more than 500 veterans examined in eighteen months at the Tropical Disease Clinic of Winston-Salem, N.C. Thomas T. Mackie, M.D., and Bessie Sonnenberg found *Endamoeba histolytica* in two-fifths of all subjects observed and foreign hookworm in one-tenth.

Less than 2% of cases had been diagnosed correctly, though disability allowances were often awarded.

Symptoms of tropical disease are often vague. Amebiasis may produce only recurrent slight diarrhea alternating with constipation or with normal defecation. In some instances bowel activity appears normal but weight loss, fatigue, and nervous anxiety are noted.

Ancylostoma duodenale may cause epigastric pain and discomfort somewhat resembling effects of duodenal ulcer.

The most efficient stool sampling is completed in one day with 1 oz. of magnesium sulfate in 200 cc. of water.

* Tropical disease problems among veterans of World War II. Am. J. Trop. Med. 29:443-451, 1949.

CHRONIC SUPERFICIAL GASTRITIS is apparently a clear-cut symptomatic disease. The condition is probably present when typical pain can be reproduced by distending the stomach with air, if peptic ulcer can be excluded. Milton Machado Mourão, M.D., and Rudolf Schindler, M.D., of the College of Medical Evangelists, Los Angeles, combined air inflation with gastroscopic examination. Superficial inflammation was commonly associated with dull epigastric distress induced by distention of the stomach.

Gastroenterology 13:61-66, 1949.

maintaining urinary antisepsis without distressing the patient

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Medical Forum

Discussion of articles published in MODERN MEDICINE *is always welcome. Address all communications to The Editors of* MODERN MEDICINE, *84 South 10th St., Minneapolis 3, Minn.*

Therapy after Vagotomy for Peptic Ulcer*

TO THE EDITORS: The true worth of vagotomy in the therapy of duodenal ulcer has not yet been determined because the length of time that has elapsed since its inception is inadequate. In our experience, however, results up to three years have been excellent in almost 80% of cases.

In the remaining 20%, symptoms develop that have given this procedure a bad name. It is generally accepted that vagotomy has little or no place in the management of peptic gastric ulcer. The title of the paper by Drs. Moses Paulson and Eugene S. Gladsden, "Therapy after Vagotomy for Peptic Ulcer," is therefore misleading.

The causes of distressing symptoms after vagotomy for duodenal ulcer are not completely understood. In some instances they are due to persistence or recurrence of peptic ulceration. This should not be overlooked. I agree with the authors that in such cases an insulin test will often indicate incomplete vagus section.

The bête noire, in our experience, has been the large flaccid stomach, with excessive belching of foul smelling gas and periodic bouts of massive vomiting. This condition has been observed in cases with and without gastroenterostomy. In one instance a three-fourths gastrectomy did not completely relieve the situation. We have not found urecholine as useful as some reports indicate. Diarrhea has not been a problem. If it occurs, medical measures are usually efficacious.

The most severe complication following vagotomy in our experience is described below:

During repair of a large hiatus hernia associated with a short esophagus, a fifty-eight-year-old woman was completely vagotomized. Her postoperative course was one of complete invalidism with complete immobility of a huge, constantly overfilled stomach. No medical measures apart from suction had any effect.

Five months later she developed jaundice and died of hepatic failure. Autopsy confirmed complete vagotomy, with no organic obstruction in pylorus or duodenum. The liver showed necrosis undistinguishable from that of epidemic hepatitis. She had had no plasma.

In summary, vagotomy is a good procedure and in the majority of cases good short-term results, at least, may be anticipated. In the others, the medical measures outlined by Drs. Paulson and Gladsden certainly should be used. Further experience may show them to be more valuable than we have found them to be.

J. D. STENSTROM, M.D.
Victoria, B.C.

(Continued on page 104)

*MODERN MEDICINE, Feb. 1, 1949, p. 53.

Convenient Treatments on Schedule... the New DeVilbiss Pocket Atomizer

● At work, while traveling, at home . . . your patients can keep prescribed treatments *on schedule* with the DeVilbiss No. 33 Pocket Atomizer. It's made to carry in purse or pocket, cannot leak, is inconspicuous to use.

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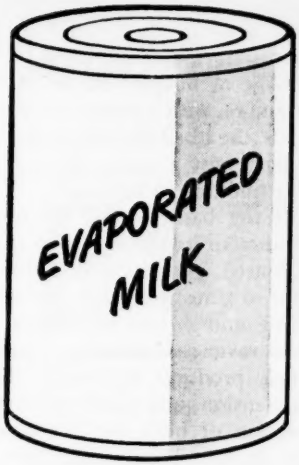

Which would you prescribe for Infant Feeding?

NATURALLY, you'd choose a name you know... a name worthy of your confidence.

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EVERY DROP of Carnation Milk is processed with *"prescription accuracy"* —in Carnation's *own* plants under Carnation's *own* continuous supervision. That is why you can have complete confidence in Carnation. It is evaporated, homogenized, enriched in vitamin D, and sterilized, under the most rigid controls. Constant tests and vigilant inspection are your guarantee that every can bearing the name Carnation meets the highest requirements of the medical profession.

NO WONDER 8 out of 10 mothers who use a Carnation formula say, *"My doctor recommended it!"* It's the milk you can confidently *prescribe by name*—day in and year out.

Carnation Evaporated Milk is an especially suitable milk for infant feeding and for bland and special diets.

The Milk Every Doctor Knows

"From Contented Cows"

Basket for Removing Ureteral Stones*

TO THE EDITORS: I read the Medical Forum discussion by Dr. Raymond L. Shultz on the removal of ureteral stones with a basket (Aug. 1, 1949, p. 72).

I disagree with his observations on the risks and amount of trauma from this innocuous procedure. I have removed many stones varying from 6 to 10 mm. in diameter from the ureter without producing any undue trauma. The process is facilitated by the McCarthy panendoscope.

It would seem to me that the ureter would be less traumatized by such a procedure than it would be by the passage of bougies up to 18 F. Furthermore, with a tightly impacted calculus, the feasibility of passing a large bougie past a stone raises considerable question in my mind.

If the basket offers too much resistance to its removal after the stone is snared, gentle traction over a period of time will allow the ureter to dilate and release the basket.

Intravenous anesthesia used routinely produces relaxation, allays apprehension, and facilitates the introduction of both the cystoscope and the basket. I have not had success with the catheter type of removal.

W. CALHOUN STIRLING, M.D.
Washington, D.C.

*MODERN MEDICINE, Jan. 15, 1949, p. 71.

eradicate scabies

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(contains 10% N-ethyl-o-crotonotoluide)

scabicidal non-irritating antipruritic bacteriostatic

Clinical experience has demonstrated that a single application of EURAX cream completely eradicates scabies in more than 88 per cent of cases. Two applications, 24 hours apart, produce cure-rates up to 100 per cent.[1-6]

EURAX—"... free from many, possibly all, of the objectionable features of other sarcopticides"[1]—a totally new product of Geigy research, offers the following unique advantages:

Prompt relief of pruritus is almost universally obtained within an hour of application.

Associated pyoderma is remarkably alleviated.

No preliminary scrubbing necessary.

Non-irritating, non-toxic in recommended dosage.

Non-greasy, non-staining, and non-odorous.

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BIBLIOGRAPHY: 1. Couperus, M.: J. Invest. Dermat. *13*:35, 1949. 2. Tronstein, A. J.: Ohio State M. J., *in press*. 3. Goldman, L.: Connecticut M. J. *13*:624, 1949. 4. Patterson, R. L.: Work in progress. 5. Domenjoz, R.: Schweiz. med. Wchnschr. *76*:1210, 1946. 6. Burckhardt, W., and Rymarowicz, R.: Schweiz. med. Wchnschr. *76*:1213, 1946.

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Management of Ivy and Oak Poisoning*

TO THE EDITORS: On the West Coast, in southern California, poison oak is predominant. We have been treating poison oak dermatitis in the same manner as we treat poison ivy, using wet compresses in the blistering, weeping stages.

We have recently had most pleasant results treating with antihistamines by mouth, and especially soothing effects with the use of 5% thephorin in vanishing cream. Within twenty-four hours, the lesions will cease itching.

Otherwise, I agree wholeheartedly with the article on poison ivy management by Dr. J. B. Howell. The treatment to be followed is essentially this:

1] Remove excessive rhus toxin by washing the parts with carbona or benzine. Some would advocate neutralization of the rhus toxin by use of 10% 2.4-dichlorophenoxyacetic acid in a suitable base to oxidize the rhus toxin.

2] If blistered, apply wet dressings, especially if the blisters are very large, with the medicaments as indicated—Burow's or alibour water.

3] If small blisters or erythema exist, apply 5% thephorin in vanishing cream.

L. H. WINER, M.D.

Beverly Hills, Calif.

*MODERN MEDICINE, Aug. 1, 1949, p. 63.

NATIONAL DIABETES WEEK OCTOBER 10-16

launches the year-round Diabetes Detection Drive to find the million unknown diabetics in the United States and Canada.

Galatest

The simplest, fastest urine sugar test known

. . . already used by medical groups for diabetes detection in 55 cities.

Galatest is unsurpassed for mass screening tests for urine sugar. During the war it was used to make thousands of urine sugar tests daily at medical centers of the U. S. armed forces. It requires no special laboratory equipment — no test tubes — no boiling. Just one drop of urine — a little Galatest powder — gives color reaction immediately. Galatest is approved by the American Diabetes Association for diabetes detection, and accepted for advertising by The Journal of the American Medical Association.

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The regular vial of Galatest powder —sufficient for 100 tests—is ideally suited for testing under supervision by officially appointed doctors' committees—in detection centers, industrial medical departments, schools, laboratories, hospitals, and physicians' offices.

2. SELF-TESTING

The new Galatest Unipak—sufficient for 4 tests—for "self-testing-in-the-home" will be made available in drugstores in all areas where local medical groups have approved "self-testing-in-the-home" as part of the national diabetes detection program.

The Denver Chemical Mfg. Co., Inc., manufacturers of Galatest, and Galatest Unipak will cooperate fully with all local, state, or national groups in support of their programs for diabetes detection. Please let us know how we can cooperate with you.

The Denver Chemical Mfg. Co., Inc., 163 Varick Street, New York 13, N. Y.

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- ✓ Thorough action
- ✓ Gentle action

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- ✓ Free from Mucosal Irritation
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- ✓ No Development of Tolerance
- ✓ Safe from Excessive Dehydration
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ADMINISTRATION

- ✓ Flexible Dosage
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- ✓ Pleasant Taste

Phospho-Soda (Fleet) is a solution containing, in each 100 cc, sodium biphosphate 48 Gm. and sodium phosphate 18 Gm.

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Diagnostix

Here are diagnostic challenges presented as they confront the consultant from the first clue to the pathologic report. Diagnosis from the Clue requires unusual acumen and luck; from Part II, perspicacity; from Part III, discernment.

Case MM-153

THE CLUE

ATTENDING M.D: Dr. Smith, the surgeon, has asked for your opinion in the next case since the diagnosis is obscure and an exploratory operation has been advised. *(They walk into a private room where a fifty-year-old man lies in bed, holding both hands tightly pressed to his upper abdomen. His pallor is considerable even against the sheets.)* The main features are extreme epigastric pain, tingling paresthesia in the legs, anemia, leukocytosis, slight fever, tachycardia, and diminished perception of all sensation in the legs.

VISITING M.D: The surgery is to be directed toward relief of abdominal pain, but there is a neurologic component . . . Mmm. How long has he been ill? Are there clues to the type of intraabdominal lesion?

ATTENDING M.D: The illness began four months ago with spells of abdominal cramp-like pain, cough, dyspnea on exertion, low-grade fever, tachycardia, and tingling of the feet. The muscles innervated by the ulnar nerves on both sides are somewhat atrophied. He has lost 50 lb., went from 210 to 160 lb. in four months.

PART II

VISITING M.D: Please give me more details. The sequence is really not clear to me.

ATTENDING M.D: Actually the story is vague to me. Four months ago he had the first acute spell, three months ago the second, and now has had four days of continuous symptoms. The pain is very intense, and the abdomen is tender but not very rigid, with guarding muscle spasm, especially in the right upper quadrant. The present attack is the most severe and is associated with nausea, vomit-

ing, and constipation. The patient has some slight difficulty speaking, in fact, almost a slurring dysarthric speech.

VISITING M.D: *(Examining patient)* Blood pressure is 150/90, pulse 110. Lungs are emphysematous, and the liver is enlarged to 3 fingerbreadths below the costal margin. Heart beats sound all right and I believe the heart is not enlarged. There is a slight systolic murmur due perhaps to the severe anemia. I find no lumps or skin lesions. Reflexes are all equal and hyperactive except the ankle jerks, which are absent. Pupils react well. There is about 50% loss of sensation to pain, temperature, touch, and vibration in the lower legs. What are the blood serologic reactions? Hemoglobin? Have studies been made of the gastrointestinal tract? How about chest and abdomen x-rays?

ATTENDING M.D: No stomach roentgenograms or gastric analyses were made between spells. Serologic tests for syphilis are negative. Blood study shows 3,000,000 red cells, 15,000 white cells with 88% polys, no eosinophils. Chest and abdomen roentgenograms, including a film made in the upright position, are negative.

VISITING M.D: What about urinalysis?

ATTENDING M.D: The albumin is 3 to 4 plus, but specific gravity is 1.025. Sedimentation rate is 15. All other data including the electrocardiogram are normal.

VISITING M.D: Has spinal fluid been examined?

ATTENDING M.D: No.

VISITING M.D: Better do it. Also, before any surgery . . .

PART III

VISITING M.D: . . . examine the urine for porphyrins. Has he ever passed red urine, or has his skin been unusually sensitive to sunlight? *(Attending M.D. shrugs his shoulders. Visiting M.D. questions the patient, who answers, "No." The doctors examine urine specimen in urinal; it is clear.)* Several possibilities come to my mind; first, tabetic crisis. But the peripheral neuritis, the absence of lightning-like pain, the normal pupils, and normal serology are somewhat against this. Of course I thought of periarteritis nodosa because of the pulmonary and neurologic signs, slight hypertension, leukocytosis, and albuminuria. But that diagnosis doesn't seem to ring a bell. All I can think of is acute intermittent porphyria with such clues as [1] neurologic disorder [2] acute abdominal pain, and [3] pallor and leukocytosis. The ulnar atrophy is quite compatible and has been described several times. The main reason I dwell on this condition, aside from the fact that the entire story is consistent, is because of the impending operation. Patients with acute porphyria are poor surgical risks and may die during or after surgery. Finally, I must confess I can't think of any reason to operate, except recurrent appendicitis with ascending infection into the liver. He's getting penicillin, I note.

PART IV

ATTENDING M.D: *(Twenty-four hours later)* The Watson-Schwartz test for porphobilinogen was positive.

VISITING M.D: The finding is probably

for Contraception

in the simplest form of all-

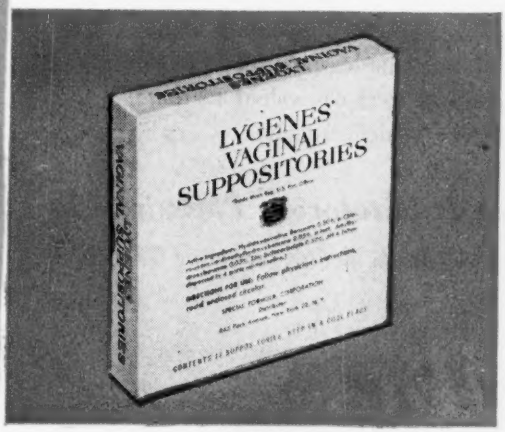
LYGENES®
VAGINAL SUPPOSITORIES

HIGHLY EFFECTIVE

Conclusions drawn by clinical investigators* suggest a wider use of the suppository.

Normal function without anxiety, fear, or devices —plus better patient-cooperation.

LYGENES instill complete confidence, provide a high degree of effectiveness. Non-toxic, esthetically acceptable, non-irritating, economical.



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Hydroxyquinoline Benzoate 0.30%
p-Chloro-symm.-m-dimethylhydroxybenzene 0.05%
p-tert. Amylhydroxybenzene 0.05%
Zinc Sulfocarbolate 0.50%
pH 4 (when dispersed in 4 parts normal saline)

*Eastman, N. J., Dept. of Obstetrics, Johns Hopkins University and Hospital, Baltimore; Seibels, R. E., Memorial Laboratory, Columbia, S. C.; J.A.M.A., 139:16-19 (Jan. 1) 1949.

Literature and clinical trial packages on request.

Council *Accepted*

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Distributor

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a 20% reduction in the price of Eskacillin the unusually palatable liquid penicillin for oral use

We are glad to announce that we have reduced the price of ESKACILLIN by 20%. This substantial reduction has been made possible by: 1) The lower cost of penicillin. 2) The manufacturing economies brought about by the unprecedented demand for ESKACILLIN.

We are passing these savings along to your patients.

ESKACILLIN is so pleasant-tasting that even young children like to take it. Furthermore—unlike most extemporaneous "fruit syrup" penicillin mixtures—ESKACILLIN is stable: it can be kept in a refrigerator for 7 full days with no loss in potency or flavor. One teaspoonful (5 cc.) of ESKACILLIN produces a blood level equivalent to that obtained with a 50,000 unit penicillin tablet.

Smith, Kline & French Laboratories, Philadelphia

ESKACILLIN is supplied in 2 fl. oz. bottles providing 600,000 units of penicillin.

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pathognomonic of acute porphyria in this case. The disease is rare and is often missed. Symptoms resemble biliary or renal colic. Excretion of porphyrins is increased in many diseases and drug intoxications, but probably only normal porphyrins are found and the condition is therefore called porphyrinuria. When the pathologic porphyrins are found, the designation is porphyria. Both coproporphyrin and uroporphyrin may be found. Feces normally contain 100 to 200 μg and the urine 10 to 120 μg. of coproporphyrin. Normally little or no uroporphyrin is excreted in the urine or stool. So urine study for uroporphyrin and porphobilinogen is indicated in any suspected case. The simplest way is to examine the urine for porphyrins by spectroscopic study, but the best clinical test is the Watson-Schwartz test, which picks out the porphobilinogen.

ATTENDING M.D: Isn't it surprising that the patient was not photosensitive?

VISITING M.D: No. Acute porphyria which is inherited as a dominant factor appearing in the third or fourth generation doesn't manifest photosensitivity or skin lesions. The urine during attacks is usually red or, if light, darkens on exposure to sunlight. There are three types: the abdominal as seen in this case, the neurologic with ascending symmetrical paralysis, and the neutral mendelian recessive which appears early in life and is accompanied by such great photosensitivity that even teeth and bones may be discolored by uroporphyrins.

Short Reports

NEW DEVICES

Detection of Explosive Anesthetic Mixtures

An instrument called a Vapotester which utilizes the principle of the Wheatstone bridge has been devised for the detection of combustible anesthetic mixtures. A sample of the mixture is drawn into a chamber containing a resistant platinum filament which ignites if the substance is combustible. The temperature of the filament and the resistance of a similar filament in a sealed chamber are thus increased, unbalancing the circuit. A current then flows through a meter on which the degree of explosibility may be read. Dr. J. W. Uhl and associates of the University of Chicago have also improvised a Statometer which will detect the presence, source, and intensity of static electricity.

Anesthesiology 10:479-483, 1949.

ORTHOPEDICS

Growth of Bone

The creation of an arteriovenous fistula between main vessels of the leg may be of value in promoting leg growth of children who because of disease have a short one. Communication between the external iliac artery and the vein of the left hind leg was made in 5 young dogs by Drs. J. M. Janes and James E. Musgrove of the Mayo Clinic, Rochester, Minn. In every case the left tibia and femur gained in length and circumference.

Proc. Staff Meet., Mayo Clin. 24:405-408, 1949.

OBSTETRICS

Vomiting of Pregnancy

Dramamine, used for motion sickness, may abolish nausea and vomiting during gestation. Dr. Paul E. Carliner and associates of Johns Hopkins University, Baltimore, administer 100 mg. three times daily, reducing the dose to 50 mg. if drowsiness and muscle tremor develop. Symptoms were completely relieved in 31 of 43 cases after failure of other drugs, sedation, and psychotherapy.

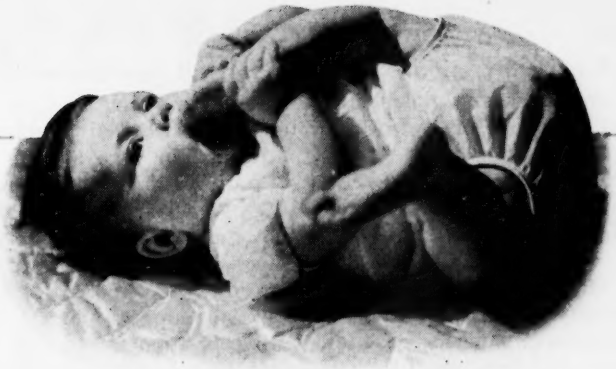
Science 110:215-216, 1949.

ANTIBIOTICS

Amebiasis and Aureomycin

Successful treatment of 14 patients with amebiasis has been accomplished with oral aureomycin, report Dr. L. V. McVay and associates of the University of Tennessee, Memphis. Cultures of *Endamoeba histolytica* were isolated from stools of 3 of these patients, so that the action of the antibiotic might also be studied in vitro. Aureomycin was introduced into heavily seeded cultures in amounts varying from 0.2 to 3.2 mg. per cubic centimeter of overlay. All amebas were destroyed by the end of six hours' exposure in tubes containing 0.8 mg. or more of aureomycin per cubic centimeter of overlay. At the end of forty-eight hours no amebas were found in any of the tubes containing aureomycin, while all the control cultures were heavily positive.

Science 109:590-591, 1949.



- **appetite stimulated . . .**
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- **greater resistance to infection exhibited**

The common complaints of infancy—anorexia, undernourishment, slowness of weight gain, propensity to infection—are less frequently encountered when White's Multi-Beta Liquid is part of the infant's diet routine.

Five drops daily of White's Multi-Beta Liquid raises the average infant intake of all clinically important vitamin B factors to a safe level.

For adults, full supplementation of the essential vitamin B factors is provided with just one teaspoonful of White's Multi-Beta Liquid daily.

An excellent prescription ingredient . . .

Palatable, non-alcoholic and stable, White's Multi-Beta Liquid is ideally suited to prescription use. Compatible with such ingredients as: (1) Tincture Nux Vomica, in equal parts, (2) Elixir Phenobarbital, 1 to 4 parts, (3) White's Mol-Iron Liquid, 1 to 8 parts.

White's *Multi-Beta Liquid*

. . . multi-purpose B complex source

WHITE LABORATORIES, INC., Pharmaceutical Manufacturers, Newark 7, N. J.

BIOCHEMISTRY

Aid to Gastric Secretion

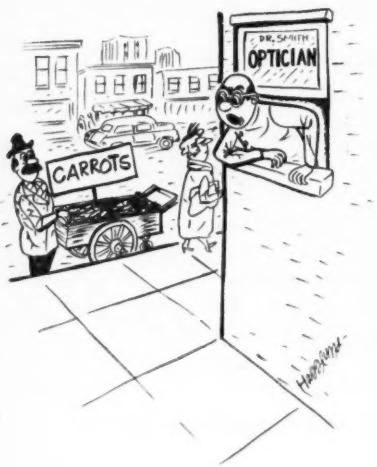
Oral or intravenous theophylline increases the flow of hydrochloric acid in the human stomach. Stimulation resembling effects of caffeine was noted by Drs. Sheldon Krasnow and M. I. Grossman of the University of Illinois, Chicago. Acid volume was greatest fifteen minutes after injection of aminophylline, 0.5 gm. in 10 cc. of saline solution, and forty-five minutes after administration of the same amount in 200 cc. of water by stomach tube.

Proc. Soc. Exper. Biol. & Med. 71:335-336, 1949.

PUBLIC HEALTH

WHO Members Total 62

Acceptance of the constitution of the World Health Organization by Honduras and Uruguay brings the total membership of WHO to 62.



"Scram!"

ANTIBIOTICS

Practical Application of Nisin

An antibiotic, nisin, produced by *Streptococcus lactis* appears to be bactericidal in vitro and in vivo. Subcutaneous injections are reported by Drs. A. Hirsch and A. T. R. Mattick of the University of Reading, England, to limit the spread of experimental tuberculosis. Intravenous injections suppress development of the disease. Combination of nisin with streptomycin and licheniformin or licheniformin and sulfathiazole demonstrates more than additive activity against H37RV strains of *Mycobacterium tuberculosis*. Streptomycin-resistant cultures of this strain are susceptible to nisin and nisin-resistant cultures to streptomycin. The drug has no effect on blood, but toxicity varies with the route of injection. Intravenously the dose of LD50 is between 20 and 30 mg. per kilogram of body weight, intramuscularly about 200 mg. per kilogram of body weight, and subcutaneously greater than 1,000.

Lancet 257:190-193, 1949.

AWARDS

Better Medical Reporting to Laity Encouraged

To encourage publication of outstanding articles on medical research and public health in general magazines, the Albert and Mary Lasker Foundation has established two awards of $500 each for writers of such articles. Information may be obtained from the Nieman Foundation for Journalism, 44 Holyoke House, Cambridge 38, Mass.

and **NOW**

in the Control of Edema

ORAL

Mercurial Diuretic

tablets **MERCUHYDRIN**®

with Ascorbic Acid

One to two tablets daily will permit maintenance of patients at optimal or "dry" weight. *Tablets* MERCUHYDRIN *with Ascorbic Acid* combat the pathologic retention of water-binding sodium which imposes a mounting fluid burden on the failing heart. Effective and usually well-tolerated, they are of special value in treatment of ambulatory patients.

MERCUHYDRIN mobilizes water and sodium from inundated tissues and fosters their urinary excretion. Oral maintenance therapy . . . *Tablets* MERCUHYDRIN *with Ascorbic Acid* . . . supplements the parenteral mercurial and diminishes the number of injections required to maintain the edema-free state.

Tablets MERCUHYDRIN *with Ascorbic Acid:* Bottles of 100. Each tablet contains meralluride 60 mg. and ascorbic acid 100 mg.

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Control Vent

FOLLOWS BABY'S FEEDING RHYTHM!

Now mothers can regulate the flow of formula according to baby's own natural feeding speed. The Davol Nurser (with the famous "Anti-Colic" Nipple) has a remarkable new feature—Control Vent.

Control Vent is simple for mothers to use: Just a little turn of the regulator collar and the formula can be hurried up or slowed down in keeping with the baby's needs. This rhythmic feeding makes the last ounce glide down as easily as the first!

The "Anti-Colic" Nipple. Constructed like the maternal nipple, it encourages natural sucking.

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The modern bottle. Slimmer and streamlined, it is easier to hold and quicker to clean.

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COMPLIMENTARY BOOKLET. An interesting new treatise, "The Development of the Infant Mouth from Embryo through First Year." Mail the coupon, please.

It's the nipple that makes it better!

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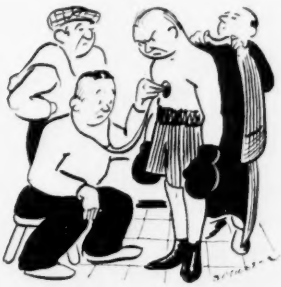
*Reg. U. S. Pat. Off.

HEMODYNAMICS

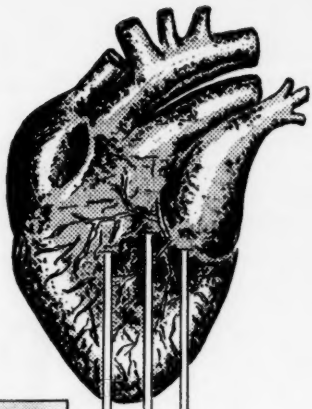
Hemorrhage in Liver Disease

Hypoprothrombinemia and increased capillary fragility are associated in about half of the instances of liver dysfunction with hemorrhagic manifestations. Increased capillary fragility alone is responsible in the remaining half. Hemorrhages will not appear, in spite of critically low prothrombin activity, if capillary resistance is normal. Drs. Mario Stefanini of Marquette University, Milwaukee, Wis., and Emilia Petrillo of the University of Rome, Italy, believe that deficient utilization of vitamin K may be an underlying cause of both factors. Although fibrinogen level is significantly related to the state of liver function, hypofibrinogenemia does not appear to significantly influence hemorrhagic tendency. The level of fibrinogen below which hemorrhages appear is very low and is reached only in cases of extreme liver dysfunction.



Acta med. Scandinav. 134:139-145, 1949.

Write FOR THE HEART



ANGINA PECTORIS

THESODATE Brewer

Theobromine Sodium Acetate (7½ gr.) with Phenobarbital (¼ gr.) enteric coated for improving cardiac action and coronary circulation. Other strengths and combinations also available.

LUETIC HEART

ENKIDE Brewer

Potassium Iodide (15 gr.) enteric coated preferable to the solution wherever potassium iodide is indicated including its use in tertiary syphilis.

CARDIAC EDEMA

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Ammonium Chloride (15 gr.) enteric coated for the treatment of cardiac edema with half the usual number of tablets.

Literature and Samples on request.

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WORCESTER 8, MASSACHUSETTS U.S.A.

*ALSO KNOWN AS DETTOL

A proved antiseptic for obstetrical and surgical use

● Dett, known as Dettol throughout the British Empire and other parts of the world, is now available to the medical profession of the United States.

Dett, although deadly to germs, is gentle to human tissue. This clean, clear liquid with an agreeable odor is safe, effective, non-irritating and non-staining. Physicians who have used Dettol in other countries will welcome its introduction in the United States under the name of Dett.

For a generous size sample, and literature, write to: The R. T. French Co., Pharmaceutical Dept., Rochester 9, New York.

DETT *THE MODERN WEAPON AGAINST INFECTION*

TREATMENT

Relief of Roentgen Dermatitis

At least two species of aloe, *A. arborescens* and *A. mutabilis*, have therapeutic power comparable to that of *A. vera* for roentgen dermatitis. Because the better known variety is difficult to obtain, Dr. L. J. A. Loewenthal routinely employs the arborescens leaf at the Johannesburg General Hospital, South Africa.

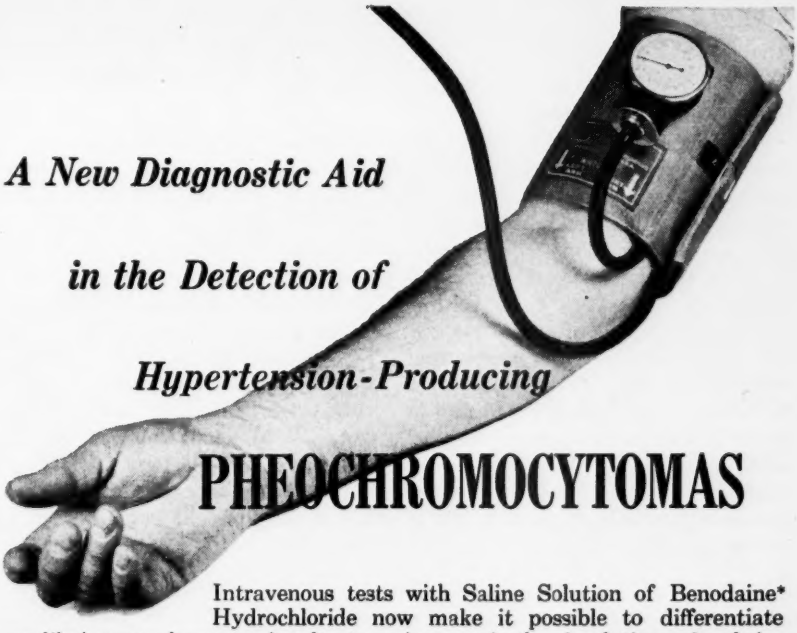
J. Invest. Dermat. 12:295-298, 1949.

TREATMENT

Postoperative Adhesions

The administration of heparin subcutaneously is an effective and safe way of reducing postoperative adhesions. Dicumarol alone or in combination with heparin is neither as effective nor as easily controlled as heparin alone, and incidence of serious hemorrhage is greater. Pitkin's menstruum and 20% gelatin are both good vehicles for the administration of heparin, but Dr. Maurice M. Davidson of New York Medical College, New York City, finds that gelatin is less of an irritant. Incidence of visceroparietal adhesions is reduced by separation of opposing serous surfaces by the interposition of gases and poorly absorbed solutions and the use of noncompressing wound dressings as well as peritonealization of raw surfaces. Viscerovisceral adhesions are little affected by these measures without the use of heparin.

Arch. Surg. 59:300-325, 1949.



A New Diagnostic Aid

in the Detection of

Hypertension-Producing

PHEOCHROMOCYTOMAS

Intravenous tests with Saline Solution of Benodaine* Hydrochloride now make it possible to differentiate readily between hypertension due to an increase in the circulating epinephrine and hypertension from other causes.

This new Merck product, when administered intravenously in suitable doses, is adrenolytic but not sympatholytic.

When elevated blood pressure is caused by an epinephrine-producing pheochromocytoma, Benodaine administered intravenously produces a brief but significant decrease in blood pressure. Hypertensive patients without this tumor show either no significant change in blood pressure or a moderate increase of short duration.

Thus the new drug serves as an effective aid in the detection of epinephrine-producing pheochromocytomas. *Literature on request.*

*Benodaine is the trade-mark of Merck & Co., Inc. for its brand of piperoxane.

Saline Solution of

Trade BENODAINE Mark

HYDROCHLORIDE

(Brand of Piperoxane Hydrochloride)

[2-(1-Piperidylmethyl)-1, 4-Benzodioxan Hydrochloride Merck]

MERCK

MERCK & CO., Inc. *Manufacturing Chemists* RAHWAY, N. J.

NUTRITION

Peptic Ulcer with Avitaminosis Investigated in Animals

Pantothenic acid deficiency may cause duodenal atrophy and ulcers in animals. Effects of rations without the vitamin but otherwise fully adequate were noted in rats by Dr. Benjamin N. Berg and associates of Columbia University, New York City. Within one hundred to one hundred twenty-five days, duodenal mucosa became atrophic in all animals observed. Acute and chronic single or multiple ulcers developed in 60% of cases, and a few perforated. Withdrawal of other vitamin B factors from the rations provided did not produce similar changes in the animals.

Proc. Soc. Exper. Biol. & Med. 71:374-376, 1949.

NEW PUBLICATIONS

Angiology Journal Planned

A periodical devoted to the field of peripheral vascular diseases will be published, starting in February 1950. The new magazine will be called *Angiology*. Dr. Saul S. Samuels of Stuyvesant Polyclinic, New York City, is to be the editor. Associate editors will include Drs. Alton Ochsner, Tulane University, New Orleans; Leo Loewe, Long Island Medical College, Brooklyn; Keith Grimson, Duke University, Durham, N. C.; D. W. Kramer, Jefferson Medical College, Philadelphia; and Gerald Pratt, New York University, New York City. The projected journal will be published by the Williams and Wilkins Company, Baltimore.

ANTIBIOTICS

Antituberculous Activity of Neomycin

Neomycin exceeds streptomycin and streptothricin in potency against tubercle bacilli. The new drug is also less toxic and less likely to produce bacterial resistance, report Dr. Selman A. Waksman and associates of Rutgers University, New Brunswick, N. J. Saprophytic and pathogenic mycobacteria are suppressed in vitro and in vivo.

Am. Rev. Tuberc. 60:78-89, 1949.

EXPERIMENTAL MEDICINE

Hypertension after Nephrectomy

Good kidney function is necessary to prevent high blood pressure, without regard to a pressor agent. Drs. Arthur Grollman of Southwestern Medical College, Dallas, and Béla Halpert of the University of Oklahoma, Oklahoma City, found that hypertension was induced in 77 of 100 rats after unilateral nephrectomy. If slight or no renal damage was noted at operation, no rise occurred; when kidneys had been injured, hypertension invariably developed, and the heart and remaining kidney enlarged to a degree corresponding to the elevation of blood pressure. Preoperative renal lesions were probably due to nutritional deficit and not to vascular disorder. When potassium was removed from the diet after bilateral nephrectomy, life was prolonged about thirty-six hours.

Proc. Soc. Exper. Biol. & Med. 71:394-398, 1949.

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PHYSIOLOGIC FALL

in blood pressure

Of the many drugs used to lower arterial pressure in hypertension, Biologically Standardized veratrum viride (in CRAW UNITS*) is the only drug that produces a physiologic fall in blood pressure. VERATRITE represents a practical modification of this effective hypotensive drug for everyday management of the mild and moderate cases of essential hypertension. Prolonged action, wide range of therapeutic safety and complete simplicity of administration are specific advantages of Veratrite therapy. Each Veratrite Tabule contains: Biologically Standardized veratrum viride 3 CRAW UNITS; sodium nitrite 1 grain; phenobarbital ¼ grain.

Samples and literature on request.

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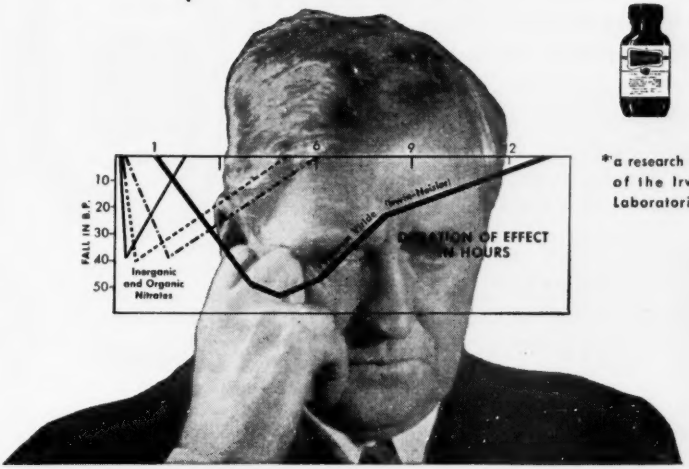


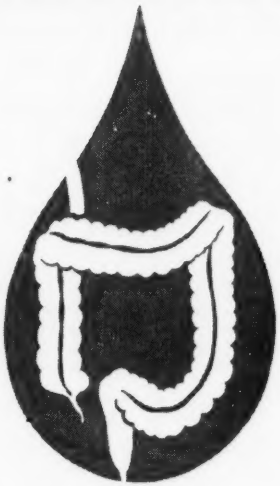
*a research development of the Irwin-Neisler Laboratories

for **safe** and **effective**
treatment of
chronic **constipation**

L.A. FORMULA

L. A. Formula is indicated in the safe and effective prevention and treatment of chronic constipation. It supplies bulk and lubrication to the intestinal contents by absorbing water and produces **normal** peristalsis. L. A. Formula is easy-to-take and pleasant-to-take and furthermore, it's economical for those who feel that they "must take something every day." Prescribe it in the next case of chronic constipation. Send for a sample now.

Contains Plantago Ovata Concentrate with 50% dextrose as a dispersing agent.



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BURTON, PARSONS & COMPANY

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*THE ORIGINAL PLANTAGO OVATA CONCENTRATE

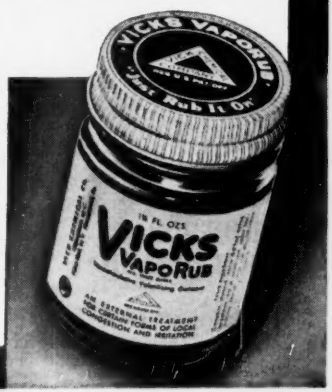
When Steam Inhalation is indicated...

consider the advantages of

Vicks VapoRub's well-balanced formula containing such volatilizing ingredients as menthol, thymol and oil of eucalyptus makes it an appropriate agent for steam inhalation. Used with steam, VapoRub provides soothing vapors that are comforting to a patient, particularly when dryness and irritation of the mucous membranes are prominent features accompanying the respiratory infection.

Important, too, is the fact that VapoRub is generally on hand in most homes and in recommending its use you can be reasonably certain it will be available when needed.

So when patients ask what medication should be used in steam inhalation consider the advantages of Vicks VapoRub.



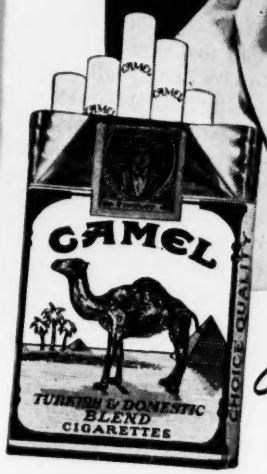
What Would You Say?

The caption under this cartoon was submitted by Edgar Brann, M.D., Brooklyn. Can you do better? Twice a month we will select a caption for this cartoon from among those submitted by our readers and send the author $5. Address your caption to Cartoon Editor, MODERN MEDICINE, 84 South 10th St., Minneapolis 3, Minnesota.

"I can find nothing the matter with you, Mr. Brown. Maybe next time I will do better."

30-DAY TEST REVEALED

"Not one single case of throat irritation due to smoking Camels!"



Yes, that's what throat specialists reported after making weekly examinations of the throats of hundreds of men and women from coast to coast who smoked Camels, and only Camels, for 30 consecutive days.

According to a Nationwide survey:

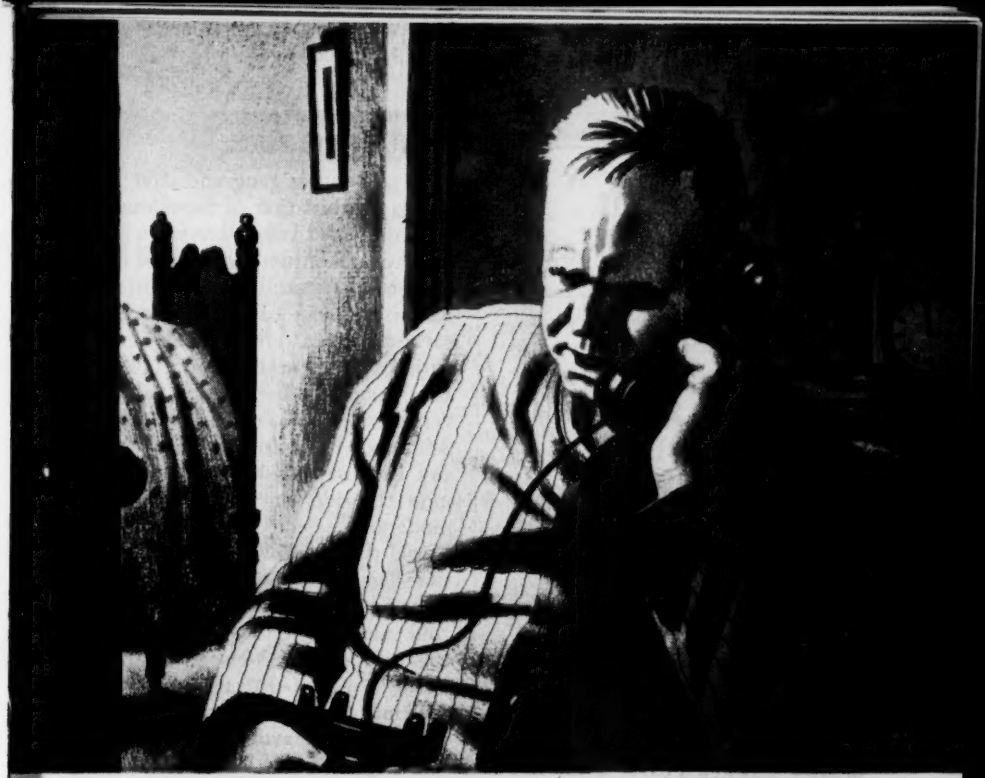
More Doctors smoke Camels than any other cigarette

When three leading independent research organizations asked 113,597 doctors what cigarette they smoked, the brand named most was Camel!

TREATMENT

Exerciser for Urinary Stress Incontinence in Women

Physiologic therapy is effective for most cases of urinary stress incontinence in women. Muscles in the region of the vagina and urethra quickly respond to reeducation. Training is facilitated by a device called a perineometer consisting of a cylindrical diaphragm attached to a manometer. The diaphragm inserted in the vagina transmits evidence of muscle contraction to the manometer and provides resistance to perineal contraction. Manometer readings show the degree of effort and give an incentive to progress. Within a few weeks coordination, tone, and strength may be restored. Dr. Arnold H. Kegel of Los Angeles used the perineometer in 200 cases of lax perineum including 100 cases of urinary stress incontinence. About 70% of the women with urinary incontinence had some coordination; these were cured in two to six weeks. In 30% of cases muscles were flaccid. Incontinence was entirely overcome in one-third, abolished except during fatigue or nervousness in one-third, and not affected in the remainder. Muscles are usually exercised for three daily periods of twenty minutes each. Records are kept and progress is reported to the physician once a week. Practice is continued for several months after continence returns. The instrument may be used for simple or neurogenic stress incontinence, gaping introitus and sagging vaginal walls after delivery, and postmenopausal atrophy.



"I hate to bother you, doctor..."

Here's a way to eliminate telephone diagnosis.
When a patient calls to complain of headache, neuritis or neuralgia pain, why not do this—Recommend Anacin tablets for temporary relief. Then see the patient at your first opportunity. Anacin is the dependable "A-P-C" formula that gives *fast* effective relief, over a *long* period of time. It's easily available to you and your patients at all hospital pharmacies and drug stores.

ANACIN

WHITEHALL PHARMACAL COMPANY • 22 East 40th Street, New York 16, N. Y.

EXPERIMENTAL MEDICINE

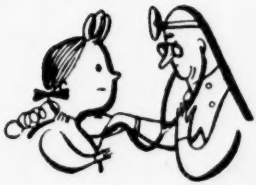
Frostbite Treatment

In preventing gangrene after frostbite, a combination of rapid thawing and continued vasodilatation with tetraethylammonium ion, etamon chloride, produces excellent results in mice. Relative merits of various forms of early therapy were assayed in mice with experimentally frozen tails by Drs. Robert E. Lempke of Yale University, New Haven, and Harris B. Schumacker, Jr., of Indiana University, Indianapolis. Rapid thawing, etamon chloride, and heparin were all moderately effective when used alone. Rapid thawing followed by mild heat was less advantageous than rapid thawing alone. Local application of cold increased the loss of tissue. Findings support the view that gangrene is the result of direct cold injury to ischemic tissues with subsequent obliteration of the arterial tree by thrombosis.

Yale J. Biol. & Med. 21:321-334, 1949.

"Sorry, we flipped a coin and the doctor gets paid this month."

Help For Your OBESITY Problems



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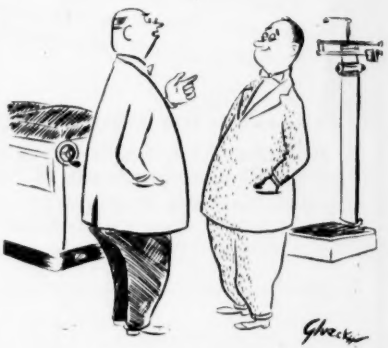
Surg., Gynec. & Obst. 89:69-73, 1949.



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ADVANCES IN INTERNAL MEDICINE, VOL. III *edited by* William Dock *and* I. Snapper. 478 pp., ill. Interscience Publishers, New York City. $8.50

Obstetrics

A TEXTBOOK OF MIDWIFERY *by* Wilfred Shaw. 3d ed. 662 pp., ill. J. & A. Churchill, London. 22*s*. 6*d*.

Pediatrics

EPILEPSY AND CONVULSIVE DISORDERS IN CHILDREN *by* Edward M. Bridge. 684 pp., ill. McGraw-Hill Book Co., New York City. $8.50

THE PREMATURE INFANT: MEDICAL AND NURSING CARE *by* Julius H. Hess *and* Evelyn C. Lundeen. 2d ed. 381 pp., ill. J. B. Lippincott Co., Philadelphia. $6

CHILDHOOD AND AFTER: SOME ESSAYS AND CLINICAL STUDIES *by* Susan Isaacs. 245 pp. International Universities Press, New York City. $4.50

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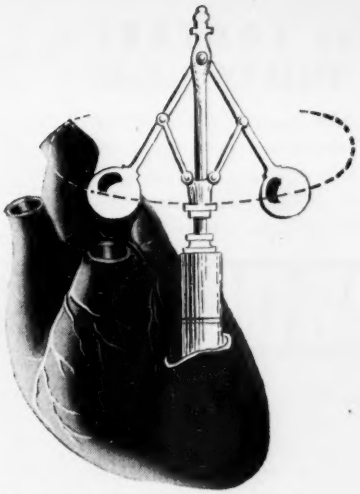

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TRAITÉ DE MÉDECINE, VOL. X *edited by* A. Lemierre *et al.* 1,167 pp., ill. Masson & Co., Paris. 3600 fr.

ELECTROCARDIOGRAPHY AND CLINICAL DISORDERS OF THE HEART BEAT *by* Sir Thomas Lewis. 285 pp., ill. Shaw & Sons, London. 25s.

CARDIOVASCULAR DISEASE: FUNDAMENTALS, DIFFERENTIAL DIAGNOSIS, PROGNOSIS, AND TREATMENT *by* Louis H. Sigler. 551 pp., ill. Grune & Stratton, New York City. $10

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THE PRACTICE OF REFRACTION *by* Sir William Stewart Duke-Elder. 5th ed. 318 pp., ill. C. V. Mosby Co., St. Louis. $6.25

Neurology & Psychiatry

MODERN PRACTICE IN PSYCHOLOGICAL MEDICINE, 1949 *edited by* J. R. Rees. 475 pp. Butterworth & Co., London. 50s.

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(Continued on page 146)

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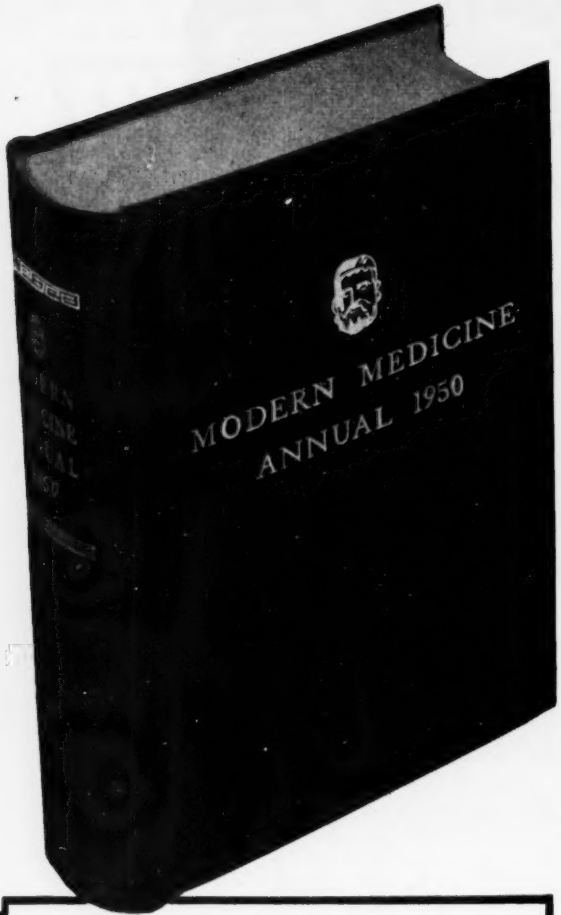

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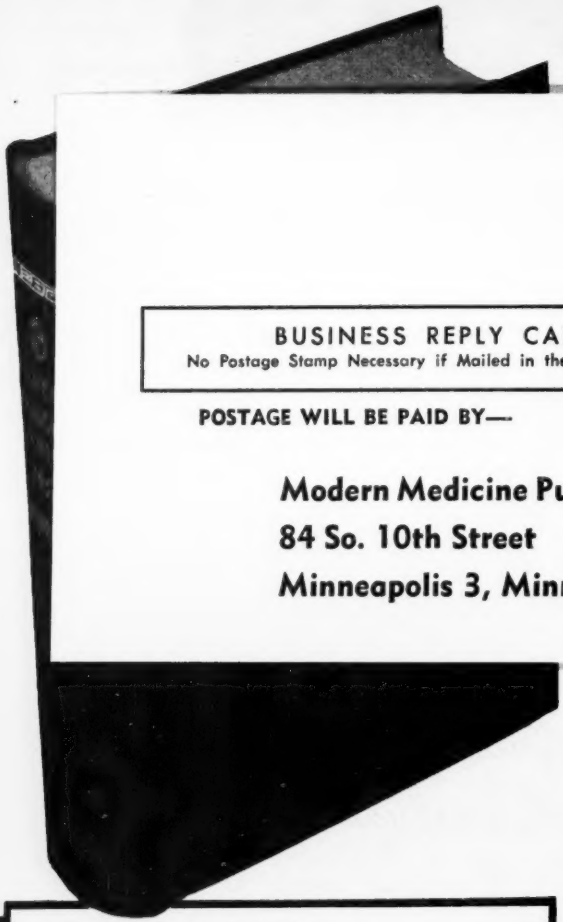

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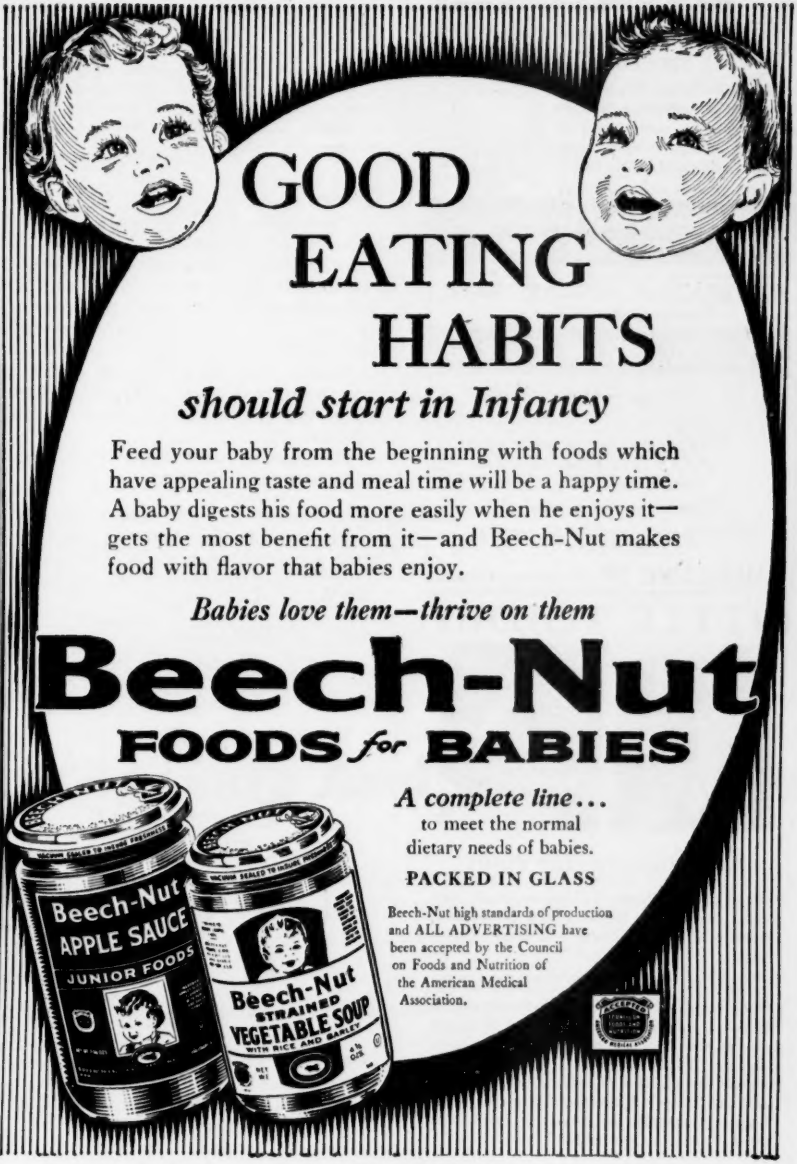
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While one of our patients was on a vacation her husband surprised her by painting their entire house. He painted the toilet a pretty pink. When the wife arrived home, she sat down and couldn't get up. The paint hadn't dried completely. The husband had to unscrew the toilet seat and call the doctor. After the doctor arrived, the anxious husband asked, "Well, well, how does it look, doctor?"

The doctor said, "Fine, but did you have to frame it?"—B.W.

"Daddy," said the doctor's daughter, "I told Bob what you thought of him and he said that, as usual, your diagnosis was wrong."—C.D.A.

"If he says 'May I cut in,' slug him."

Apologies to Jefferson

Overheard in the waiting room:

First patient: "My, this doctor is busy. I've been waiting for hours."

Second patient: "So have I. They should change the Declaration of Independence to 'life, liberty, and the pursuit of health.' "—H.C.

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As usual the mother exclaimed, "I've told his father a thousand times . . ."

Then she paused and blushed. Her husband was the Baptist preacher.—H.C.C.

To keep young, associate with young people. To get old, try to keep up with them.—F.C.

"Strip? Do I look like Gypsy Rose Lee?"

Handle with Care

A mountaineer came in complaining of an acute backache and I questioned him regarding the findings in previous examinations. "Well," he drawled, "I went to a specialist in Charlotte, North Carolina, and had a constipation with him, and he told me I had a dish in my vertebrae."—G.N.B.

"Are you free tonight?" asked the intern. "Not exactly," the girl replied, "but very inexpensive."—C.D.

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The pretty-faced, artistically built, and mentally alert young lady had just explained that she wished to become a mother and that all the tests made by a leading clinician of another city showed her perfectly normal, yet she had not conceived.

"Apparently you are in need of a man . . ."

"Doctor, I came seeking advice, not service," she interrupted.—I.L.C.

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While chatting with an old lady who had come for treatment, the doctor absent-mindedly placed a bottle to his mouth. Horrified he spit it out. It was a specimen the patient had brought along.—L.R.

Wait and See

The doctor had called on a patient five times. On the last visit the patient announced that he had called in another doctor.

"He said that your diagnosis is wrong."

"Is that so?" snapped the first doctor. "Well, the autopsy will show who is right."—E.K.

"They're my sister's."

He's Going to Find Out

Five-year-old Gary was informed by his mother that she was expecting a new baby, but that it must be kept a secret for awhile. Two weeks later at a family dinner, Gary's little sister whispered to her mother and pleaded that she might tell Granny their secret. Mother consented, but Gary, having heard the loud whisper, said, "Mother, if she can tell Granny, can I tell Papa?"—J.V.G.

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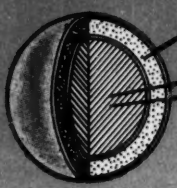

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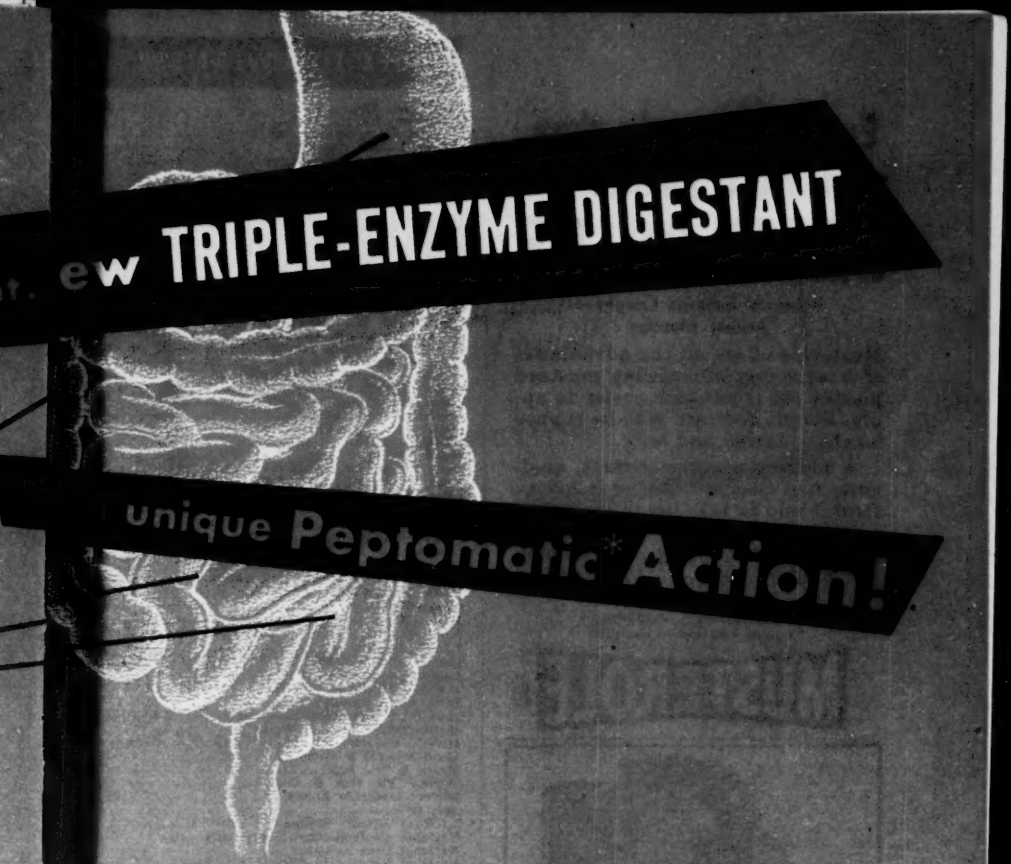

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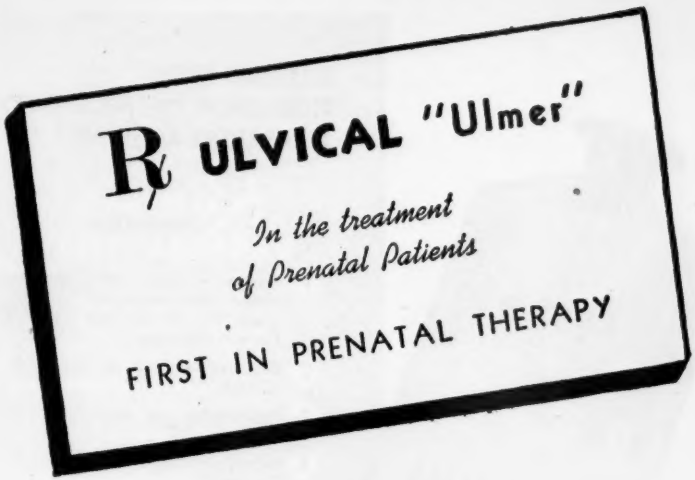

ULVICAL "Ulmer" combines all the prenatal patient's requirements into one easy-to-take, well-tolerated, economical tablet. As a dietary supplement during pregnancy and lactation, it supplies sufficient Iron to correct or prevent any tendency toward anemia, minimum daily requirements of Calcium and all the essential Vitamins.

FORMULA

Vitamin B_1 (Thiamine Chloride)	1.0 Mg. (167 USP Units)
Vitamin B_2 (Riboflavin)	2.0 Mg. (1,000 Micrograms)
Vitamin A (Ester)	1500 USP Units
Vitamin D (Irradiated Yeast)	200 USP Units
Vitamin C (Ascorbic Acid)	16-⅔ Mg. (333 USP Units)
Vitamin E (Tocopherol)	2 Mg.
Calcium Pyrophosphate	7½ Grs. (Ca. 150 Mg.) (P. 100 Mg.)
Ferrous Sulphate (Dried) (eq. Approx. 3 grs. USP)	.2 Grs. (Fe 38 Mg.)

To eliminate the possibility of intolerance, the Ascorbic Acid and Thiamine Hydrochloride are released and utilized in the stomach while the other factors are not released until they enter the small intestine. Endorsed and prescribed by leading obstetricians, ULVICAL "Ulmer" provides assured results in the recommended dosage of 2 to 6 tablets per day.

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When cardiac failure, hypertension, arteriosclerosis, or pregnancy complications call for a sodium free diet, you can let your patients have ***salt without sodium: Neocurtasal,*** the completely sodium free seasoning agent. Neocurtasal looks and is used like regular table salt. Constituents: Potassium chloride, ammonium chloride, potassium formate, calcium formate, magnesium citrate and starch. Potassium content 36%; chloride 39.3%; calcium 0.3%; magnesium 0.2%. Available in convenient 2 oz. shakers and 8 oz. bottles.

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A Respiratory-Circulatory stimulant for the elderly patient . . .

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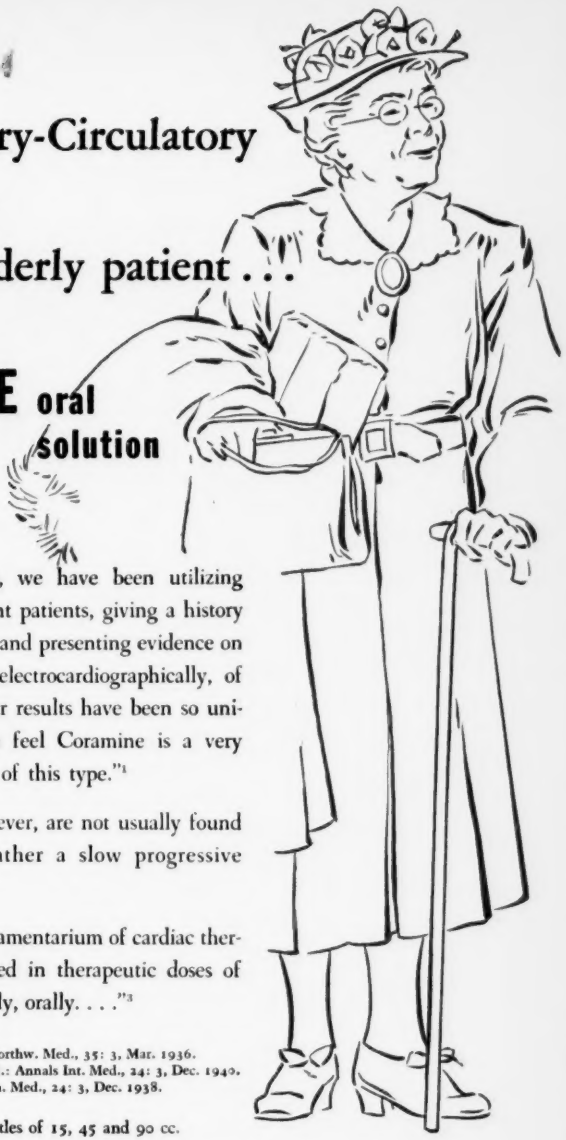

"For the past 8 months, we have been utilizing Coramine . . . in ambulant patients, giving a history of definite anginal attacks and presenting evidence on physical examination or electrocardiographically, of coronary involvement. Our results have been so uniformly favorable that we feel Coramine is a very valuable drug in patients of this type."[1]

"Dramatic responses, however, are not usually found from oral doses, but rather a slow progressive improvement. . . ."[2]

"As an addition to the armamentarium of cardiac therapy. Coramine is suggested in therapeutic doses of 20 to 30 minims twice daily, orally. . . ."[3]

1. Brower, J. L., and Korry, S.: Northw. Med., 35: 3, Mar. 1936.
2. Stroud, W., and Twaddle, P. H.: Annals Int. Med., 24: 3, Dec. 1940.
3. Cowan, J. H.: J. of Lab. & Clin. Med., 24: 3, Dec. 1938.

CORAMINE ORAL SOLUTION, bottles of 15, 45 and 90 cc.

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